BORDER CROSSINGS AND (RE)CROSSINGS:

THE POST-REPRESENTATIONAL TURN IN SOCIAL CARTOGRAPHY

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In memory of Cheryl A. Casebeer (1945 – 2013)

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The purpose of this study is to demonstrate the utility of a post-representational social cartography for mapping classroom texts. As a strategy for culturally responsible pedagogy, mapping provides a polyphonic discourse that helps educators navigate the spatial nature of the educational experience. By visualizing their students' latent assumptions about cultural diversity, for example, educators can identify harmful or apathetic worldviews, such as cognitive dissonance, and differentiate instruction for transformative learning.

From a post-representational perspective, which frames maps as inscriptions as opposed to representations or constructions, cartography does not simply explain or describe the world; rather, it is a part of the complex interplay between people and their surroundings. Mapping is a process of *becoming*, of negotiating and (re)negotiating the rhizomatic weavings of heterotopic space, and maps are practices that unfold in the liminality of human experience. What this means for education is that post-representational maps can help reify and decode the perceived locations and relationships of disciplinary phenomena in the social milieu. As both a celebration and an extension of the work of Rolland G. Paulston, who first encouraged his colleagues to become social cartographers, this study addresses our current crisis of difference, and opens possibilities for new ways of seeing social and educational change.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACKNOWLEDGEMENTS

1.0   WALKING THE LABYRINTH

In 1978, shortly after losing his job as an English teacher, thirty-eight-year-old William Least Heat-Moon outfitted an Econoline van with a sink, a stove, and a portable toilet. For the next three months, essentially broke and heartsick, he traveled over 13,000 miles across the United States, "heading toward those little towns that get on the map—if they get on at all—only because some cartographer has a blank space to fill" (Heat-Moon, 1999, p. 4).

The shape of his expedition, which took him around the country's perimeter, was at least partially inspired by the Plains Indians' notion that a circle represents the direction of natural forces, such as migration routes or the weather (see Figure 1). What he found, as he ventured from one small town to the next, was that even the most remote communities were in a constant state of flux. "A human being is not a waxen rubbing," he wrote. "He is free to perceive the matrix, and, within his limits, change from it…His very form depends not on repetition but upon variation from old patterns" (p. 400).

As if to underscore this discovery, Heat-Moon described a visit to a privet-hedge labyrinth in New Harmony, Indiana near the end of his journey. It was easy to navigate, the *right* path being so worn into the earth, but "without the errors, wrong turns, and blind alleys, without the doubling back and misdirection and fumbling and chance discoveries, [there was] not one bit of joy in walking the labyrinth" (p. 411). By adhering to the status quo, Heat-Moon had denied himself the simple, but important, pleasure of enjoying the maze from a new perspective.
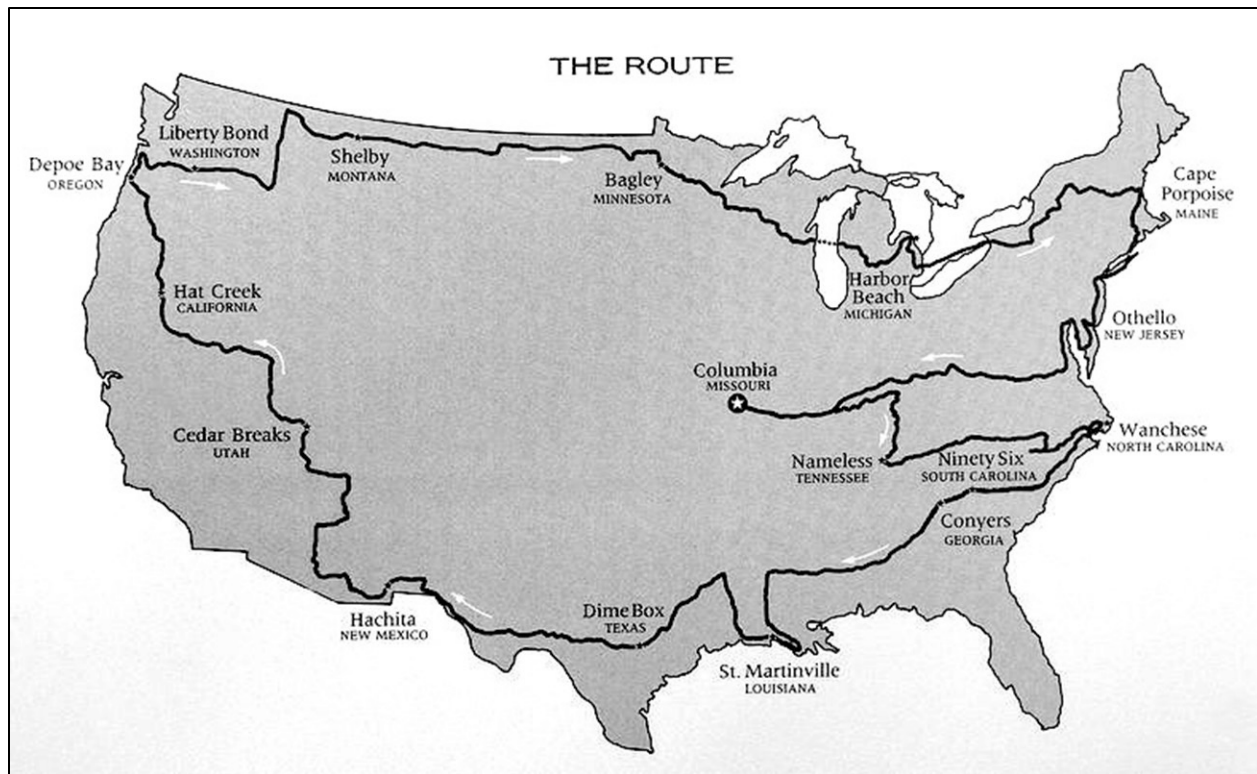
Figure 1. William Least Heat-Moon's route along America's backroads (Heat-Moon, 1999)

1.1   EDUCATION AS CONTESTED TERRAIN

Change, as Heat-Moon discovered, is a catalyst for progress. In this study, which takes the view

that education itself is experiencing a profound transformation in terms of purposes, content, and

methods, change—that is, being open to pluralism and multiplicity—is seen as the impetus for

support, collaboration, and overall improvement. According to Usher and Edwards (1994),

education is not only the site of conflict, but also a part of the stakes in that conflict. They

suggest that a postmodern perspective, which encourages new modes of experience and

subjectivity, can help us to navigate this contested terrain, to "challenge existing concepts,

structures, and hierarchies of knowledge" (p. 3).

1.1.1 Representing Knowledge and Visualizing Difference

Social cartography, a postmodern tool for viewing social and educational change, emerged during "a near-magic time of movement and possibility, of fragmentation and aporia" for comparative studies (Paulston, 1996, p. xvi). As a visiting professor at the University of British Columbia in Vancouver during the summer of 1991, Rolland G. Paulston took advantage of his surroundings, "a setting of vast panoramas of sea, forest, city and sky," to think about new ways of representing knowledge and visualizing difference (p. xvi). Upon his return to the University of Pittsburgh that fall, he had started to understand "how a spatial turn in comparative studies would focus less on formal theory and competing truth claims and more on how contingent knowledge may be seen as embodied, locally constructed, and re-presented as oppositional yet complementary positionings in shifting fields" (pp. xvi-xvii).

These fields, which he called *maps*, eschewed the rigidities of modern geography, such as fixed boundaries, and embraced what Soja and Hooper (1993) described as "a provocative and distinctly postmodern reconceptualization of spatiality that connects the social production of space to the cultural politics of difference in new and imaginative ways" (p. 184).

As social relations continue to evolve, it is easy to get lost in the shifting intellectual landscape as new claimants emerge from the cultural surround. Paulston, however, was determined to help us navigate this increasingly fragmented terrain, and, in the first of his mapping exercises, for example, he situated four paradigms and 21 theories in comparative education discourse to help comparative educators move beyond false dichotomies and arbitrary positions and orient themselves as reflexive scholars to challenging new intellectual and representational tasks (see Figure 2).
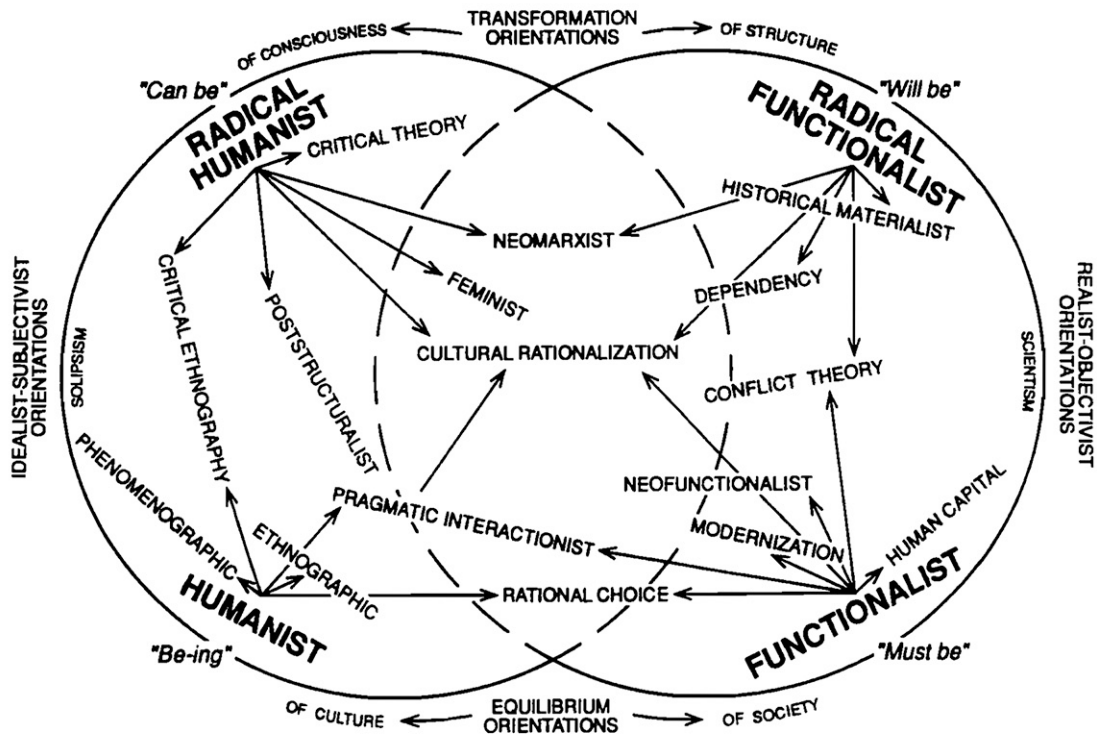
Figure 2. Mapping Discourse in Comparative Education Texts (Paulston, 1993)

As a phenomenological process, discourse mapping facilitates "the reinscription and resituation of meanings, events and objects in the field within broader movements" (p. 106). In Figure 2, for example, space is arranged along the horizontal axis from idealist-subjectivist orientations on the left to realist-objectivist orientations on the right. Similarly, space is arranged along the vertical axis from equilibrium orientations on the bottom to transformation orientations on the top. Discourse mapping also "suggests a dynamic and rhizomatic field of tangled roots and tendrils," which allows readers to visualize the distinct characteristics or essential structures of the discourse that might not be otherwise visible (p. 106). In Figure 2, the direction of the arrows indicates interactions among the theories, while the length of the arrows describes the extent of these interactions.

4

1.1.2 Cartographic Ways of World-making

Working from Bourdieu's (1989) definition of *habitus* "[as] both a system of schemes of production of practices and a system of perception and appreciation of practices…[in which] its operation expresses the social position in which it was elaborated" (p. 19), which he combined with Goodman's (1978) rejection of "mystical obscurantism, anti-intellectual intuitionism, and anti-scientific humanism" in favor of "countless worlds made from nothing but the use of symbols" (p. 1), Paulston (1993) argued that "the struggle over classifications, such as maps, is a fundamental dimension of cultural and class relations" (p. 101). "[To] change the world," he wrote, "one has to map and change the ways of world-making, that is, the vision of the world and the practical operations by which groups are produced and reproduced" (p. 101).

Similarly, by drawing on Heidegger's (1972) concept of *alethia*, which holds that truth is best understood as the absence of concealment as opposed to representation or correspondence, Paulston demonstrated how social maps were capable of inaugurating their own worlds of significance. "When literary space is revealed in visual space, the map becomes a kind of language, the mode, or *dichtung* (literally, a saying) in which what we see as truth happens…This language realm inaugurates a 'world' and gives to things their appearance and significance" (Paulston & Liebman, 1994, p. 217).

Layer by layer, Paulston appropriated theories from different sources until his mapping rationale was as complex as the intertextual fields where he mapped the increasingly fragmented terrain of his field. Rather than obfuscating his argument that social mapping is useful for constructing *scapes* of cultural phenomena, this exercise led to a more nuanced realization of what a postmodern social cartography could accomplish (Goodman, 1976).

5

1.2   ENGAGING NEW HISTORIES OF CARTOGRAPHY

Toward the end of his career, Paulston (2005) acknowledged the evolutionary nature of cartographic discourse. "Right now the mapping mode dominant for several centuries is undergoing what might be called a cartographic transformation," he wrote. "It is likely that the maps of the twenty-first century will look very different [from the maps of today]" (p. 4). In order to illustrate this transformation, he channeled Foucault's (1970) poststructuralist exploration of how the imbricated epistemes of scientific discourse had changed over time.

To Foucault's initial configuration, Paulston (2000) added the postmodern era to describe the present state of the discourse. Instead of grounding his visualization in the moment, however, Paulston anticipated the next iteration of the field by including a series of question marks after the postmodern era to provide space for the next way of seeing social and educational change. In his review of Paulston's work, Pickles (1999) echoed the need to look ahead by describing discourse mapping as "an exciting, dynamic project that crosses disciplinary boundaries with ease," while cautioning that a postmodern social cartography was "bounded by its…failure to engage the new histories and historical geographies of cartography and mapping" (p. 95-97).

In order to address Pickles' (1999) concern that a postmodern social cartography is outdated, as well as to extend Paulston's (1996) work beyond the comparative, this study situates discourse mapping within the post-representational paradigm, "a new perspective in mapping that is contrary to the viewpoint of 'maps as truth' and wants to go beyond the 'maps as social constructions' approach" (Azócar Fernández & Buchroithner, 2014, p. 87). Accordingly, I have added the post-representational era to Foucault/Paulston's list of epistemes, as well as another series of question marks to allow for whatever comes next (see Table 1).

Table 1. Imbricated epistemes of European scientific discourse (Paulston, 2000)

Imaginary Era	Episteme	Focus On	Representations
Renaissance	Humanism	Man, resemblance	Translations, pictures
Classical	Rationalism	Natural history	Statistics, grids
Modern	Realism	Time, differentiation	Nomothetic models
Postmodern	Pluralism	Space, complexity	Networks, simulations
Post-representational	Reflexivism	Re-territorialization	Mobiles, actants
?	?	?	?

1.2.1 Foundations for a Post-representational Social Cartography

Post-representational social cartography differs from postmodern social cartography in several ways. For starters, it goes beyond the idea that maps are representations or social constructions (expressions of knowledge) toward the idea that maps are inscriptions (producers of knowledge). According to Pickles (2004), who was among the first to extend cartographic thinking beyond the ontic status, "a map is not a representation of the world but an inscription that does (or sometimes does not do) work in the world" (p. 67). Rather than focusing on how historical transformations in social life have affected the ways that maps are created and used, this perspective suggests the need to consider how cartographic reasoning affects social life instead.

Post-representational social cartography also adopts a performative understanding of mapping. According to Kitchin, Perkins, and Dodge (2011), maps should be "understood as always in a state of becoming; as always mapping; as simultaneously being produced *and* consumed, authored *and* read, designed *and* used, serving as a representation *and* practice; as mutually constituting map/space in a dyadic relationship" (p. 22). This shift from *how things are* to *how things become* is significant because it reframes maps as processes as opposed to products and imagines a reciprocal relationship between mapmakers and map readers.

1.3   FRAMING THE STUDY

The purpose of this study is to demonstrate the utility of a post-representational social cartography for mapping educational texts. Teachers who can read the subtle qualities of their classrooms, such as their students' latent assumptions and beliefs, are in a better position to meet their students' individual needs than those who take a less differentiated approach to instruction. By framing social cartography as an interpretive mode of inquiry within the post-representational paradigm of cartography, this study not only engages new histories of cartography, it also repositions the discourse within a reflexive tradition that encourages culturally responsible pedagogy and introduces mapping to a new generation of scholar/educator/cartographers.

According to Paulston (1993), social mapping is "a valuable tool to capture the rhetoric and metaphor of texts, to make the invisible visible, and to open a way for intertextuality among competing discourses…[Maps] provide orientation to and in practice, and they help us see…an ever expanding textual discourse" (p. 106). Similarly, Ruitenberg (2007) argues that "cartographic discourse is a valuable tool for educational theory and research…[because] it can aid educational scholars in examining the spatial aspects of educational experience to which narrative discourse, so predominant in education, may not pay attention" (p. 22).

It is worth developing a post-representational social cartography because "there is always a need for new systems that may help us organize operative educational variables so that we may better order material and gain fresh perspective contributing to practical (and perhaps even more sophisticated) vantage points" (Rodman, 2011, p. 49). As both a celebration and an extension of Paulston's work, this study seeks to increase the number of ways we represent and interpret the spatial nature of the educational experience.

1.3.1 Social Cartography as Interpretive Inquiry

There are no fixed criteria for interpretation or understanding; however, the regulative ideal for interpretive inquiry is human solidarity (Smith, 2008). As a practical and moral endeavor, the purpose of this kind of double hermeneutic inquiry is to interpret the interpretations that people give to their own socially constructed realities. Reflection, on behalf of both the researcher and the researched, is an essential part of the interpretive process, and it is important to avoid solipsistic reasoning in favor of rich conclusions drawn from sufficiently *thick* texts (Piantanida & Garman, 2009).

According to Morehouse (2011), "interpretative inquiry is defined by agency, action, and the interpretation of meaning within complex relationships…This orientation to inquiry is also oriented toward understanding process over product" (p. 3). Because interpretive researchers work with open-ended results, meaning that they are subjective and likely to change, post-representational social cartography is a sensible option for helping them interpret their research. One of the benefits of an interpretive cartographic discourse, for example, is its utility for viewing complex relationships in an intertextual field. This does not mean that these relationships are simplified; mapping *simply* provides an alternate way of seeing them in a context that might not be so apparent from more narrative explanations.

The perspectivist nature of social cartography is also important because it aligns with the interpretive worldview that reality and its observers are situated in a practice or an activity. To this end, it is common for social cartographers to plot themselves—that is, their perceptions at a particular moment in time—in order to provide insight into the position from which their maps have been constructed.

1.3.2 Social Cartography as Culturally Responsible Pedagogy

According to Huber-Warring and Warring (2005), culturally responsible pedagogy "requires deeper levels of reflection and more culturally sensitive awareness and language usage regarding the multicultural and multireligious diversity of our students' world" (p. 63-64). From this perspective, issues of equity, human rights, and social justice are seen not as individual pursuits, but rather as essential components for a collective endeavor that views both teachers and students as active participants in democratic environments (Gillette, 2001).

At the center of this type of pedagogy, which encourages teachers to focus not only on how their beliefs have been constructed but also on the social conditions in which their practices are situated, is the question of how what teachers do in their classrooms can contribute to our efforts to build a better society (Huber-Warring & Warring, 2005; McLaren, 1998; Robinson Shade, 1989). Reflection—that is, a willingness to rethink basic assumptions and truth claims— is the most critical skill in teacher training and development, capable of bringing individuals to greater states of self-actualization (Dewey, 1933; Schon, 1996; Zeichner & Liston, 1987).

For Hill-Jackson and Lewis (2010), culturally responsible strategies that help educators recognize faulty ideologies, "such as films, multicultural literature, field trips, discussions, and service-learning, have proved effective for promoting a social justice character among [their students]" (p. 82). In this study, social cartography is framed as another strategy for culturally responsible pedagogy that can help teachers identify those areas in which their students may unwittingly harbor apathetic worldviews or unifocal perspectives. Students must be made aware of their dispositions, as well as of the conditions in which their dispositions developed, before they can engage in meaningful reflection and think about changing them.

1.4   ORGANIZING THE STUDY

This study is organized in four parts and three interludes. Each part explores a different facet of post-representational social cartography, such as its historical or theoretical roots, while each interlude transitions from one part to the next by taking a deeper look at specific concepts or by making connections between overarching themes (see Table 2).

The first part of this study offers a brief history of visual images, beginning with Plato's philosophical treatise on forms, stretching through the work of Descartes and Nietzsche in the seventeenth and eighteenth centuries, respectively, and concluding with a discussion of how visual images are currently being used in educational research. It is followed by an interlude that explains how our understanding of maps, as a particular type of image, has changed over time.

The second part provides a comprehensive look at the Social Cartography Project at the University of Pittsburgh. In addition to exploring the theoretical foundations of Paulston's postmodern mapping rationale, it also demonstrates how social cartographers have used social maps to examine everything from the scopic regimes of modernity and postmodernity to perspectives on school decentralization. It is followed by an interlude that challenges arguments against the introduction of postmodern theories, particularly social cartography, to comparative education discourse.

The third part describes how a post-representational social cartography, as both a method of interpretive inquiry and a strategy for culturally responsible pedagogy, is capable of helping educators read and decode the nuances of their classrooms. It explores the history of post-representational cartography, outlines some criteria for making social maps, and is followed by an interlude that fleshes out one particular aesthetic for mapping educational texts.

Section	Summary
	Table 2. Narrative Map: Summary of the main points of the study
Prelude	The purpose of this study is to demonstrate the utility of a post-representational social cartography, as both an interpretive method of inquiry and a strategy for culturally responsible pedagogy, for mapping educational texts.
Part One	Visual images, including maps, have long and complex histories, and it is important to make a distinction between images that represent knowledge, such as tables and infographics, and images that produce it, such as social maps.
Interlude	Even though maps are generally understood as representations of geometric space, postmodern cartographers argue that maps are socially rather than objectively constructed, reflecting the conditions in which they were produced.
Part Two	By initiating the Social Cartography Project at the University of Pittsburgh, Rolland G. Paulston encouraged his colleagues in comparative education to use postmodern social maps to visually situate their work in the discourse.
Interlude	Toward the end of his career, social cartography sustained collateral damage from those who misrepresented Paulston's work in their battle against the introduction of postmodern theories to comparative education discourse.
Part Three	A post-representational social cartography celebrates and extends Paulston's work by engaging new histories of cartography and focusing on how maps act to shape our understanding of the world around us.
Interlude	There is no one way to make a social map; however, there is a set of criteria that all social cartographers need to follow in terms of border-making, populating, and situating their work in their chosen discourse.
Part Four	Educators can use social maps to reveal the nuances of their classrooms, such as their students' dispositions for social justice or cultural diversity, which can lead to more individualized instruction for transformative learning.
Envoi	The maps of the future will differ from the maps of today; however, the options that we have available for viewing the spatial nature of the educational experience can nevertheless help us address our current crisis of difference.

Finally, the fourth part of this study gives three article-length examples of the mapping aesthetic described in the previous interlude, including a demonstration of how to map preservice teachers' dispositions for social justice. It is followed by an envoi that contemplates the maps of the future, acting as an invitation to post-representational social cartography by encouraging educators to become social cartographers, either by exploring the aesthetic described here or by coming up with their own strategies for mapping educational texts.

2.0   THE VISUAL TURN IN EDUCATIONAL RESEARCH

Visual culture is broadly defined as "what is seen" (Roeder, 1998, p. 275). More specifically, "[it] is a shortcut to describing a complex set of relations between visual phenomena, meanings, and actions" (Stanworth, 2002, p. 107). The study of these relations, which spans a variety of disciplines and perspectives, including anthropology, education, and geography, encompasses not only what we can see or visualize, but also how the expanding role of images creates meaning and demands significance in our everyday lives.

According to Mirzoeff (1998), "visual culture has gone from being a useful phrase for people working in art history, film and media studies, sociology and other aspects of the visual to a fashionable, if controversial, new means of doing interdisciplinary work" (p. 4). Building on the legacies of such fields as multicultural studies and queer theory, it challenged its position among competing discourses, pushing back on the idea that the written word was the highest form of intellectual practice and arguing that Western philosophy and science rely more on pictorial than textual ways of world-making. For Mitchell (1994), this challenge stems from "the realization that *spectatorship*…may be as deep a problem as various forms of *reading*…and that 'visual experience' or 'visual literacy' might not be fully explicable in the model of textuality" (p. 16). What used to be seen as a distraction, in other words, is now being viewed as "the locus of cultural and historical change," as an opportunity to move beyond tired forms of representation and discourse analysis (Mirzoeff, 1999, p. 31).

2.0.1 The Bias Against Visual Forms of Knowledge Production

Visual images have long and complex histories. The disciplinary roots of maps and charts, for example, are as old as writing itself, and they continue to expand as technology provides us with new ways of seeing how knowledge is produced. According to Drucker (2014), "we are still Babylonians, in our use of the calendar, our measure of days, hours, minutes, just as we remain classical in our logic, medieval in our classification systems, and modern in our use of measurements expressed in rational form" (p. 65). In spite of our reliance on the many schematic conventions that scaffold our daily lives, there is a bias against visual forms of knowledge production that regulates the use of images in educational research to the bottom of an unspoken hierarchy as logocentric and numerocentric attitudes prevail (Elkins, 2001).

The purpose of this part of the study is to address this bias by exploring the history of images in the social sciences and demonstrating how visual images can help us make sense of the world around us. To this end, a distinction is made between images that represent knowledge and images that produce it. Representations, such as infographics of school demographics and test scores, are static in relation to the information they present. They do not offer us anything more than what we can *see*, and, for all of their intricacies, could just as easily be presented in non-graphical formats. Images that produce knowledge, on the other hand, such as volvelles (wheel charts) and social maps, are dynamic in relation to the information they present. Here, space is just as important as text, and each point on the image means something different in relation to every other point. In addition to exploring the history of visual images and making a distinction between images that represent knowledge and images that produce it, this part also explores the criteria for using visual images in educational research.
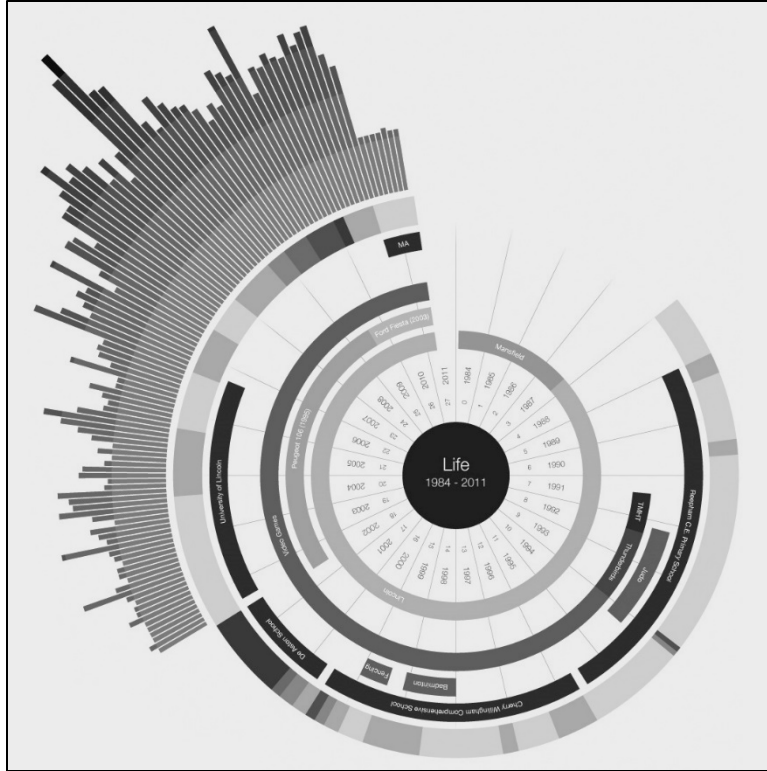
Figure 3. Infographic: An example of an image that represents knowledge (Drucker, 2014)

2.0.2 Images that Represent Knowledge

Representations are inflexible and over-determined. Furthermore, they are "so generalizable and re-purposable that their structure almost disappears from view…Thus the static arrangement of information in a tabular form suggests that it has been modeled according to a strict distinction of content types and that these columns and divisions are neither mutable nor combinatoric" (Drucker, 2014, p. 87). In Figure 3, for example, even though information is presented in what appears to be a complex centralized ring, it could have just as easily been presented in a simple chart or bar graph. Representations are important for displaying information; however, they lack the capacity to generate knowledge, which can lead to new ways of seeing.
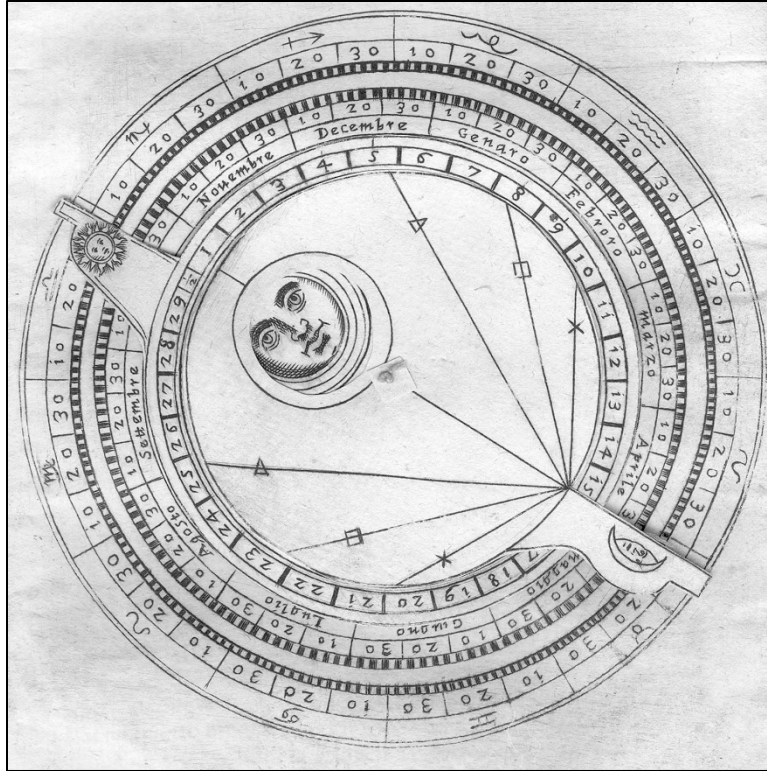
Figure 4. Volvelle: An example of an image that produces knowledge (Drucker, 2014)

2.0.3   Images that Produce Knowledge

Unlike representations, knowledge generators support a combinatoric calculation in which each

point is viewed as unique and can be combined with every other point in order to create

something new (Gardner, 1958). This means that "their spatial features allow their components

to be combined in a multiplicity of ways. They make use of position, sequence, order, and

comparison across aligned fields as fundamental spatial properties" (Drucker, 2014, p. 105). In

Figure 4, for example, each space on the volvelle could be combined with any other space in

order to produce new information about the position of the sun in relation to the calendar year.

Other examples of knowledge generators include organic rhizomes and social maps.

16

2.0.4 Visual Codes and Subjective Experience

It is important to make a distinction between representations and knowledge generators, especially in the context of the present study, because logocentric and numerocentric attitudes can make it difficult tell the difference. For some, images are flat and static, and there is no difference between a photograph, for example, and a social map. This reluctance to accept visual forms of knowledge production is similar to the enduring distrust of humanistic knowledge, as visual codes are often misread as unreliable subjective experiences, not being attached to a set of stable—read, *scientific*—rules for understanding (Drucker, 2014).

2.1 HISTORICAL PERSPECTIVES ON VISUAL IMAGES

2.1.1 Plato and the Transcendent Realm of Forms

Historically, visual images have been dismissed as unreliable. In Ancient Greece, for example, Plato argued that all images were derivative of a realm of forms that exists outside of the visible world and gives it meaning. This transcendent realm, which is only accessible in the mind, is permanent and immutable, removed from the *messiness* of our everyday experiences. The material world, however, which is accessible through the senses, is malleable and imperfect. Unlike images, which belong to the material world, forms are transcendent. This means that they do not exist in space or time. In the mind, for example, it is possible to separate a globe from its property of roundness. Roundness does not exist, at least not in a tangible way, and yet it is capable of being instantiated at many times and in many places (Roochnik, 2004).

Unlike images, forms are characteristically pure. They are essences, properties separated from all other properties. Whereas a material object, such as the globe, exhibits many different properties—roundness, mass, color, etc.—a form is just one of these properties, existing outside of a particular space and time. To summarize, while forms are both transcendent and pure, material objects are grounded and impure, complex amalgamations of properties that can only exist at a certain time and in a certain place.

For Plato, images were unreliable because he saw them as copies of material objects, which in turn were copies of the transcendent forms. From this perspective, everything we see is a subjective interpretation of an objective reality, and therefore it cannot be relied on to tell us anything about how the world is really formed (Roochnik, 2004).

2.1.2   Descartes, Optics, and the Soul/Body Dichotomy

Following in Plato's footsteps, René Descartes was also skeptical of visual images. As part of an intellectual awakening, he threw out everything he thought he knew and tried to construct his own scientific methodology that proved that real scientific knowledge was found in the mind rather than in the senses. To show how his new methodology was compatible with Christianity, thus avoiding accusations of heresy, he envisioned a world where everything was split into two different types of substances: those of the body (optics/science) and those of the soul (religion). In order to prove this argument, Descartes began by casting doubt on everything he perceived through the senses. He was not trying to suggest that nothing exists or that it is impossible for us to know if anything exists; rather, he was suggesting that everything we come to know through our senses is subjective and therefore open to doubt (Detlefsen, 2012).

Because what I see and hear might differ from what someone else see and hear—consider the Rashomon effect,[1] for example—Descartes argued that it was impossible to base scientific knowledge on what is essentially a subjective method for collecting data. His thesis was that we can never perceive external objects directly, but only through the filters of our minds, and he used three similar arguments to open all knowledge to doubt: the dream argument, the deceiving God argument, and the evil demon argument.

In the dream argument, which served as a prelude to his famous *I think therefore I am* experiment, Descartes held that because there are no definite signs to distinguish dream experience from waking experience it is possible that a person could be dreaming at any given moment. This means that we can never be sure if the objects in front of us are real, because we have no way of knowing if they are a part of a dream, the subjective differences between waking life and the dream world being impossible to objectively tell apart.

Similarly, in the deceiving God and the evil demon arguments, he suggested that it was possible to be under the control of an all-powerful deity that could deceive us about something such as mathematical knowledge, which Descartes believed to contain the basic structures of the knowable world. Basically, these arguments both hold that because there is no way to rule out that we are having one experience in a certain state when we are really having a different experience in a separate state, there can be no way of knowing if what we perceive through our senses is real, imagined, or purposefully altered by a higher power. He did not intend for these arguments to be taken literally, of course. His point was that our senses can be deceived. From this perspective, visual images are not to be trusted because there is no way of telling if what we are seeing is actually real—that is, an unaffected part of our waking lives (Detlefsen, 2012).

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[1] The Rashomon effect, named for Akira Kurosawa's *Rashomon* (1950) in which the witnesses to a murder offer different accounts, describes the contradictory interpretations that people can give to the same event.

2.1.3 Nietzsche's Perspectivism

During the eighteenth century, the prejudice toward visual images began to change. The British empiricists, such as John Locke, George Berkeley, and David Hume, for example, argued that sense-experience rather than reason or intuition was the basis for either some or all of our knowledge. The rise of aestheticism, which derived its name from the Greek word for *perceive*, was also instrumental in suggesting a form of mediated understanding with neither the subject (viewer) nor the object (visual image) controlling the conditions for knowing (Sullivan, 2005).

In the nineteenth century, Friedrich Nietzsche began to outline his philosophy on perspectivism. In *The Will to Power*, he suggested that perspectivity, the idea that all ideations take place from particular perspectives, is "the fundamental condition of all life" (Nietzsche, 2000, p. 101). Because we are capable of occupying one particular space at one particular time, we are only able to see things from a single perspective, from which some things are visible and some things are not. A view from one side of a room, for example, might afford a view of what lies under a table, while a view from another side might not (see Figure 5).

When Nietzsche talked about perspective, however, he was not just referring to what we can perceive through our sense of sight. He was actually relating our beliefs to our values in such a way as to show how our interpretations of these beliefs can affect our perspectives. Different perspectives are defined by different values, not simply differences in belief. People with different religious beliefs, for example, may still share the same perspective if their beliefs reflect the same kind of values. For Nietzsche, philosophical beliefs about truth were distorted because they refused to acknowledge their own perspectivity. Therefore, he believed that it was impossible to represent beliefs about the world that are without value (Nietzsche, 2000).
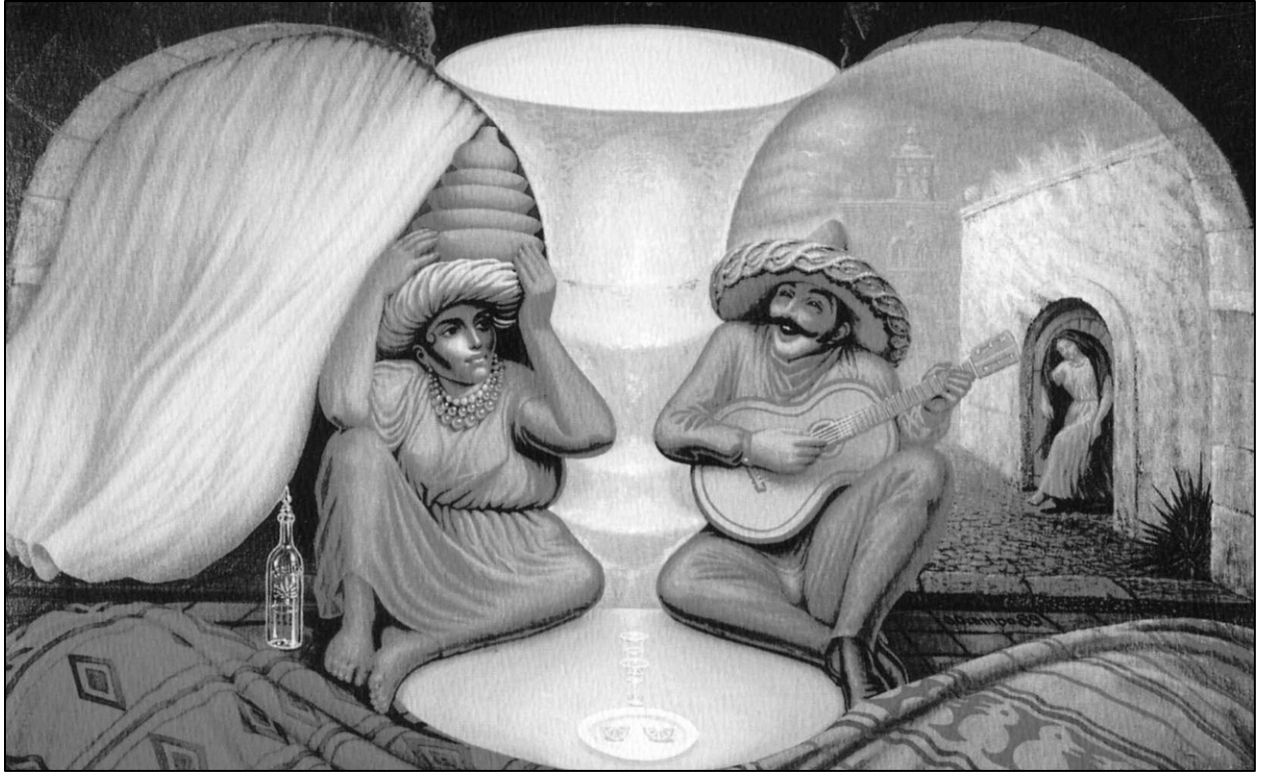
Figure 5. Perspectivism in Octavio Ocampo's *Forever Always* (Ocampo, 1985)

According to Lacewing (2008), Nietzsche's ideas can be explained through their relationship to sense perception. "First, we find it easier…to reproduce an image we are familiar with than to remember what is new and different in our sense impression…Second, we cannot take everything—we do not see every leaf on a tree, but out of our visual experience, create for ourselves an image of something approximating the tree" (p. 53). It is impossible, in other words, for us to experience *the world as it is*, but it is possible for us to experience it selectively, in a way that reflects our values. Applied to visual images, Nietzsche's perspectivism preempts the notion that images can be separated from the context in which they were constructed. The author's intention is important; however, the way an image is perceived is based more on the viewer's values and beliefs.

2.1.4 Deconstructive Criticism and the Primacy of Perception

By the twentieth century, a line of inquiry that considered discriminations of preference and judgment began to emerge in the phenomenological works of Martin Heidegger and Maurice Merleau-Ponty. Heidegger, for example, introduced a *deconstructive criticism* where the critic experiments with presuppositions and intertextualities instead of searching for a central interpretation of a given work, while Merleau-Ponty explored *the primacy of perception*, the idea that we perceive the world first through our senses and second through our values.

In *Being and Time*, Heidegger (1962) argued that the purpose of deconstruction was to "arrive at those primordial experiences in which we achieved our first ways of determining the nature of Being—the ways which have guided us ever since" (p. 44). This means that it is possible to reinterpret such things as our social traditions from contemporary perspectives in order to reveal deeper meanings from our past even though we are not of that moment in time.

In *The Phenomenology of Perception*, Merleau-Ponty (1945) described phenomenology as the study of essences, including those of perception and consciousness. As a method of describing the nature of our perceptual contact with the world around us, phenomenology is primarily concerned with providing a direct description of human experience. Whereas Plato and Descartes both attempted to separate how we perceive material objects—from either a realm of forms or the realm of the mind, respectively—Merleau-Ponty argued that it was impossible to separate any part of ourselves from our perceptions. "One's own body is in the world just as the heart is in the organism: it continuously breathes life into the visible spectacle, animates it and nourishes it from within, and forms a system with it" (p. 209). The world, in other words, is a field for perception, and meaning can only be derived from our own consciousness.

Even though empiricism maintains that knowledge is derived from sensory perceptions, Merleau-Ponty was not satisfied with its inability to explain how the nature of consciousness can influence our perceptions. While perception may be structured by associative forces, such as past experiences, and focused by attention, attention itself does not create perception. Attention, "from within a consciousness that constitutes everything, or rather, that eternally possesses the intelligible structure of all its objects, just as in the empiricist understanding of a consciousness that constitutes nothing, remains an abstract and ineffective power" (p. 30).

Judgment, which is also useful for considering the role of reflective analysis, is the perception of a relationship between any objects of perception. "Between sensing and judging, ordinary experience draws a very clear distinction. It understands judgment to be a position-taking; judgment aims at knowing something valid for me across all the moments of my life and valid for other existing or possible minds" (pp. 35-36). While a judgment may be a logical interpretation of a sensory perception, judgment is neither a purely logical activity nor a purely sensory activity. Judgments, therefore, may transcend both reason and experience.

If every sensation belongs to a sensory field, as Merleau-Ponty suggests, and if all senses are spatial and all sensory objects occupy space, then space can be defined as a form of external experience, rather than as an actual physical setting in which external objects are arranged. The relationships between these objects are constructed by the experiences of the viewer; however, as both appearance and reality are phenomena of consciousness, it is possible for the false perception of a perceptual object to conceal its true reality. Conversely, the appearance of an object may also reveal this reality. Merleau-Ponty's phenomenology, therefore, is concerned with both appearance and reality as perceptual phenomena, which leads to an understanding of visual images as texts from which multiple meanings can be derived.

2.2   CONTEMPORARY PERSPECTIVES ON VISUAL IMAGES

Since the middle of the twentieth century, visual images have gradually become legitimized as data for research in the social sciences. Aesthetic inquiry in education, for example, began with John Dewey's work in relating aesthetic theories to the interconnectedness of perception, thinking, and feeling. He believed that it was important to shift our understanding of art as a process to that of art as an experience, and argued for the consideration of all forms of art, including visual images, that were ignored by previous theories, which often restricted logic to objects of possible experience. In *Art and Experience*, Dewey (1934) even went so far as to suggest that "works of art are the most intimate and energetic means of aiding individuals to share in the arts of living. Civilization is uncivil because human beings are divided into non-communicating sects, races, nations, classes and cliques" (p. 336).

Following the cognitive revolution of the late 1950s and the 1960s, other educational theorists, including Elliot Eisner and Maxine Greene, weighed in on the importance of the senses. In *The Enlightened Eye*, for example, Eisner (1991) conceptualized research as connoisseurship, as an act of *curating* data, and argued that there is a need to shift our methods of inquiry from the verbal and the numerical to the aesthetic, to rely more on a visual than a narrative discourse. Similarly, in *Landscapes of Learning*, Greene (1978) urged us to stay *wide-awake* and *release our imaginations* in order to cultivate new visions for transformation across all kinds of inquiry. "There are no guarantees," she wrote, "but wide-awakeness can play a part in the process of liberating and arousing, in helping people pose questions with regard to what is oppressive, mindless, and wrong" (p. 51). Rather than ignoring visual images, Eisner and Greene joined others who advocated for their consideration as a legitimate means of world-making.

2.2.1   Methodological Approaches to the Visual

Currently, as logocentric and numerocentric attitudes begin to break down in the face of new ways of seeing subjective experience, there are three methodological approaches that are accepted for the use of visual images in qualitative research: the objective, the formative, and the generative. The objective approach involves the use of images, such as photographs, as a form of data collection. The formative approach moves beyond the objective by bridging the gap between latent imagery and lived experience and stressing the importance of how inquiry is framed and knowledge is produced. And the generative approach involves the analysis of visual images that researchers create or co-create with the researched (Siegesmund, 2008).

The objective approach to visual research developed along with the formal academic fields of anthropology and sociology. Even though photography was initially assumed to portray a fixed reality, offering a factual representation of a particular time and place, attention eventually shifted to how a photograph was constructed, taking into account such things as framing, composition, and perspective. This suggests that in order to understand a visual image, researchers have to consider not only what they see, but also the underlying contexts and conditions in which the image was produced.

The formative approach came about as researchers began to consider not only how images were constructed, but also how they were capable of generating felt reactions. This approach requires researchers to interact with their subjects, perhaps by giving them cameras to capture their visual experiences, thus shifting the onus of authorship from the researchers to the participants. In this way, researchers are able to analyze the meanings that individuals make within their own environments.

The generative approach to visual research differs from both the objective and the formative approaches insofar as the researcher is now directly responsible for the construction or co-construction of the images used for analysis. Examples of generative practices include painting, mapmaking, sculpture, and performance art. In order to be considered *legitimate*, however, generated images must engage at least two of the three domains of significance described by Sullivan (2005): the empiricist, the interpretivist, and the critical.

In the empiricist domain, images are assessed by their relation to an external reality that can be referenced and compared. A photograph of a dilapidated classroom, for example, which can be compared to the original, belongs to the empiricist domain. In theory, one could visit the site of the photograph and assess whether or not it is representative of the school as a whole or if the researcher was using the image out of context.

In the interpretivist domain, images are assessed by their ability to convey meaning not only to their creators but also to their audience. In contrast to images in the empiricist domain, those here are intended to convey a multiplicity of meanings. A painting of a homeless man, for example, might lead some to question what personal choices he made to end up on the street, and others to question how the *system* itself led to his subsistence existence.

Finally, in the critical domain, images are assessed by their ability to move their audience to social action. A photograph of a child with a cleft palette distributed by the United Nations Children's Fund, for example, is designed to entice people to help children in developing nations live better lives. Images, of course, often belong to several domains at once. According to Siegesmund (2008), "this complex web of meaning that lies behind the making of a visual image is necessary to move art from an image to be appreciated to an image that conveys and engages linguistic and nonlinguistic inquiry" (p. 942).

Table 3. Methodological approaches toward the visual

Approach	Description
Objective	The use of images, such as photographs, as a form of data collection.
Formative	The use of images as social constructions rather than truths.
Generative	The use of images created by the researcher through data collection.
Empiricist	Images are compared to an external reality that can be referenced.
Interpretivist	Images are examined from a variety of social contexts.
Critical	Images are intended to move their audience to social action.

2.2.2   Social Cartography as Visual Research

As a phenomenological research method, social cartography meets Siegesmund's (2008) criteria for generative practice and produces maps that exist in two of Sullivan's (2005) domains of significance: the interpretivist and the critical. Even though social maps seek to represent the perceptions of actors in a tangible social reality, this reality is not something that can be easily referenced or compared, so social maps do not normally belong to the empiricist domain.

Social maps belong to the interpretivist domain because they are both a product of the cartographer's experience and an invitation to reflexive practice. Even though cartographers are responsible for drawing the boundaries of their maps, for example, they often invite their subjects to participate in the mapping process.

Social maps also belong to the critical domain because they seek, through non-innocent practices, to reveal injustice. Even though not all social maps will be so explicitly political in their construction, they nevertheless contribute to the discourse on power relations by what or who they choose to include or exclude. In the following interlude, which explores the evolution of maps from representations of truth to social constructions, we start to see why Paulston (1993) appropriated interpretive mapping practices to build his mapping rationale.

27

3.0   RETHINKING REPRESENTATIONAL CARTOGRAPHY

Maps are generally understood as scaled representations of geometric space. They seek to produce truth, and, in doing so, claim to represent the world as it actually is, albeit within acceptable levels of abstraction and precision. As a scientific endeavor, cartography is primarily concerned with determining the best way to represent and communicate that truth. The many different kinds of maps, such as cartograms and choropleths, are indicative of the scientific community's pursuit of the most accurate representations (see Figure 6).

From the earliest attempts at using maps to produce truth, such as the feudal maps that emerged during the Middle Ages to help opposing kingdoms conduct wars and plot their domains, mapmakers have been obsessed with drawing the most accurate maps. According to Kitchin, Perkins, and Dodge (2011), "over time maps had become more and more precise, cartographic knowledge improved, and implicitly it was assumed that everything could be known and mapped within a Cartesian framework" (p. 5).

In the 1950s, the focus shifted from constructing precise representations of space to constructing useful representations, keeping the map user, as well as the mapmaker, in mind. Channeling the work of Robinson (1976), "research thus sought to improve map designs by carefully controlled scientific experimentation that focused on issues such as how to represent location, direction and distance; how to select information; how best to symbolize these data; [and] how to combine these symbols together" (p. 5).

In the 1960s and 1970s, cartographers such as Head (1984) and Schlichtmann (1979) demonstrated how maps could be theorized as conceptual as well as functional, thus making a push for cartography as the dominant framework in academic research. Many scholars, including Brewer (1997) and Lloyd (2005), started to explore the ways in which cartographers encoded information that was decoded by users, which led to an explosion in the ways that maps were framed: for example, as feminist, cinematic, or post-colonial artifacts. "Here the map user is conceived as an apolitical recipient of knowledge and the cartographer as a technician striving to deliver spatially precise, value-free representations that were the product of carefully controlled laboratory-based experiments" (Kitchin, Perkins, & Dodge, 2011, p. 6).

By the 1980s, as emerging technologies began to make cartography more accessible, the academy's interest in maps as research data seemingly diminished overnight. According to Kitchin, Perkins, and Dodge (2011), "technological changes rendered problematic a single authoritative view of the world at a time when data was becoming much more readily available, and when technologies for the manipulation and dissemination of mapping were also becoming significantly changed" (p. 7). Map readers could now be map makers, and, with the advent of the Internet, the world was flooded with new maps that could be disseminated at a low cost.

From the 1990s, mapping, as a scientific endeavor, has addressed the need to push past a strictly positivist representation of space by adopting a multilayered approach consisting of both cognitive and semiotic approaches. Even though the underlying purpose of scientific cartography is still to produce truth, it now not only considers the social context of the data it represents, it also focuses as much on presenting what is known as it does on revealing what is unknown. In other words, even though mapping can now be investigated as contextual and collaborative, from a scientific perspective, it is still based on scientific experimentation and representation.
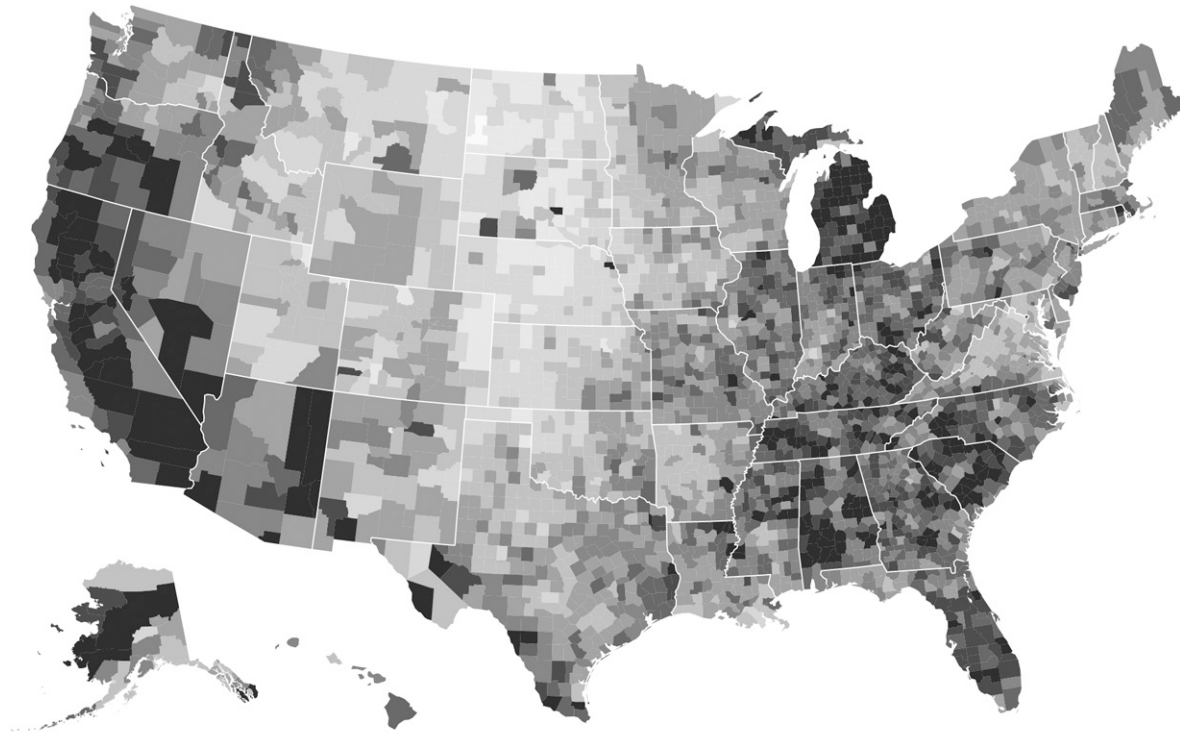
Figure 6. Choropleth: An example of representational cartography (Drucker, 2014)

3.0.1 Maps as Social Constructions

In the 1980s, even as the academy's interest in maps began to wane, scholars began to push back on the notion that maps, of any kind, were capable of producing an objective, neutral truth. Instead of looking at the meanings of maps as holding across different social and cultural contexts, some cartographers broke with positivist epistemologies in favor of more constructivist ones that framed maps as objects of power. Harley (1989), for example, "contended that the process of mapping consists of creating, rather than simply revealing, knowledge. In the process of creation many subjective decisions are made about what to include, how the map will look and what the map is seeking to communicate" (p. 9).

For Pickles (2004), the power dynamics, or *second texts*, that undergird all maps are constructed not only during the creation process, vis-à-vis the decisions that cartographers make, but during the reading process as well, vis-à-vis the ways that the cartographers' decisions, the inclusions and the exclusions, are interpreted by map users. According to Wood (1992), the power dynamics inherent in maps often lead to subjugation and oppression under the logocentric guise of objectivity, even if these results were not specifically intended. Consider the first maps of the conquistadors' so-called New World, for example. Even though the natives they encountered already had names for the places they claimed to discover, they renamed them with colonial abandon; even when they did not explicitly rename certain territories, they left blank spaces on their maps rather than adopt the indigenous monikers. By examining different categories across which power might be articulated, contextual studies can reveal how maps not only reflect but also embody different kinds of non-innocent relationships. Colonialism, property ownership, national identity, race, military power, social economic status, natural resources, and gender, among others, have all played key roles in mapping relations (Wood, 1992).

A belief in maps as social constructions rather than as representations of truth led to the rise of a critical cartography, a decidedly political practice, in terms of power relations, of mapmaking that tried to deconstruct not only the work of spatial relations but also the work of the science that produced them. This does not suggest that critical cartography is fundamentally against an empiricist ideology; rather, it implies that critical cartographers are aware of the myriad contexts in which their maps are not only produced but also read. "From such a perspective there is no one 'right way' to produce maps, but their makers need to be sensitive to politics and context of their making and use" (Kitchin, Perkins, & Dodge, 2011, p. 10). They need to understand that their work will be interpreted from more than one perspective.

31
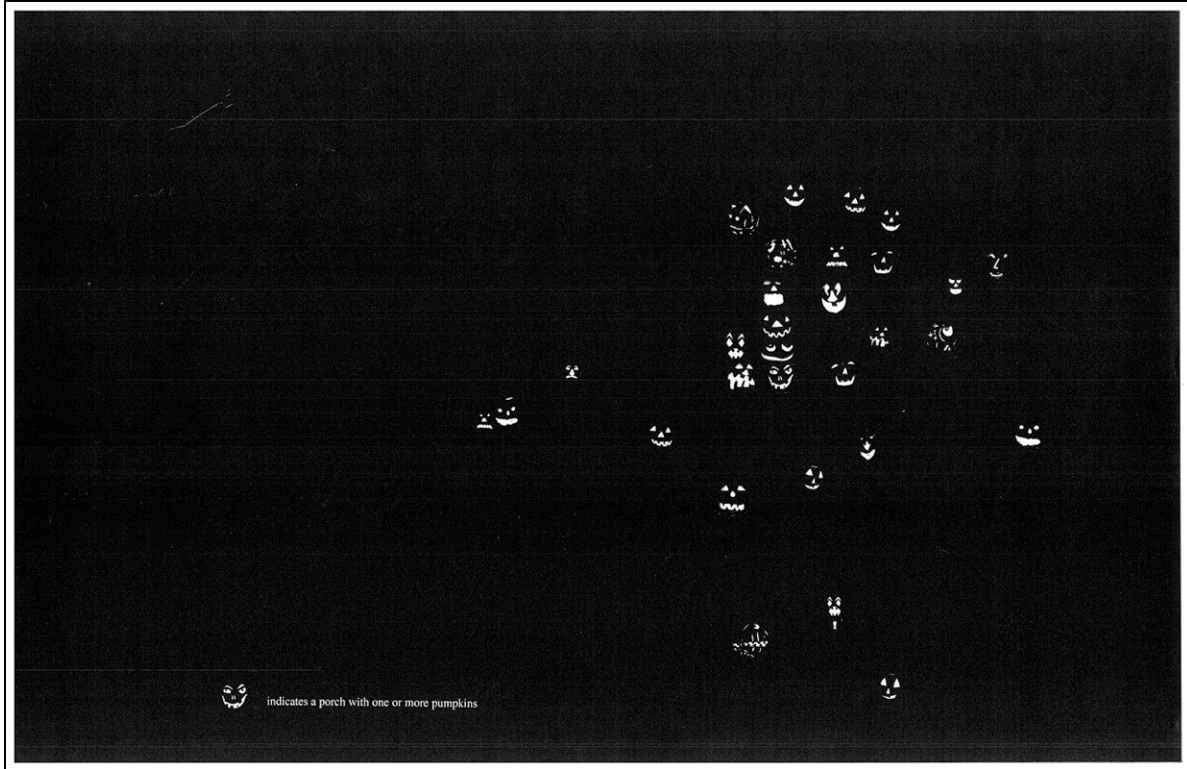
Figure 7. Jack-o'-lantern Map: An example of critical cartography (Wood & Fels, 2008)

In Figure 7, for example, Wood and Fels (2008) map the distribution of jack-o'-lanterns in the Boylan Heights neighborhood of Raleigh, North Carolina. What they discovered was that the most intricate pumpkin carvings were usually displayed outside of the nicest houses. Similarly, they found that the highest concentration of jack-o'-lanterns occurred in the wealthiest part of the neighborhood, whereas there was a near absence of jack-o'-lanterns in less expensive houses further down the hill. For some, this map could simply offer a unique look at Boylan Heights around Halloween. For others, it could serve as yet another instance of housing or income inequality, further evidence that something needs to be done about how wealth is distributed across property lines. In any case, it is important to remember that the maps as social constructions perspective acknowledges all readings from contextual standpoints.

32

3.0.2 The Promise of a Postmodern Social Cartography

During the ontological shift in thinking about maps as truth to thinking about maps as social constructions, Paulston and Liebman (1994) introduced social cartography to comparative researchers as a means for enhancing the presentation of their findings. They argued that the development of a visual dialogue, one that aligned with Harley's (1989) view of maps as a kind of language, "may help to present and decode immediate and practical answers to the perceived locations and relationships of persons, objects, and perceptions in the social milieu" (Paulston & Liebman, 1994, p. 215). In addition to providing a complement to narrative discourse, which focuses on the temporal nature of the educational experience, the purpose of this dialogue, which focuses on the spatial nature of the educational experience, was to offer an alternative way of communicating how we see and engage with the world around us.

Paulston and Liebman justified their new methodology by appropriating the ideas of prominent thinkers, such as Baudrillard and Foucault, and linking them to established fields, including cognitive mapping and geographic cartography. Their rationale was that "the map provides the comparative educator a better understanding of the social milieu and gives all persons the opportunity to enter a dialogue to show where they believe they are in society…[and offers] an opportunity to situate the world of ideas in a postmodern panorama, disallowing the promotion of an orthodoxy" (p. 232). Even though their work was limited to comparative education discourse, their ideas were culled from the larger cartographic surround. From this perspective, maps "cease to be understood primarily as inert records or morphological landscapes or passive reflections of the world of objects, but are regarded as refracted images contributing to dialogue in a socially constructed world" (Harley, 2001, p. 53).

4.0   THE SOCIAL CARTOGRAPHY PROJECT

In his presidential address to the Comparative and International Education Society, Rust (1991) called for the application of postmodern theories to emerging representations of reality. His argument, informed by the work of Baudrillard, Derrida, Foucault, and Lyotard, was that "metanarratives lock civilization into totalitarian and logocentric thought systems…[thus providing] a restrictive, totalizing theory of history and science" (p. 615). These systems, which hold that truth is based on theoretical constructs rather than subjective human experience, marginalize minorities, such as women and professionals from developing nations, and impose themselves to the point of consumption on weaker, albeit less *visible*, narratives.

Rather than disposing of metanarratives altogether, which Rust claimed would trap us into localized frameworks and deny the integration of harmonizing values, he argued that comparative educators should work to construct more inclusive ones. Instead of claiming that there is only one legitimate way of knowing, the postmodern alternative is to accept varied ways of knowing that not only acknowledge their application to specific interests, but also admit their limitations in the context of other narratives. For Rust, "postmodern criticism is so crucial because questioning the basic tenets of modernity challenges the basis of the world's recent social and cultural history on which we have come to rely" (p. 625). Even though postmodernism is often dismissed as being context dependent, thus lacking a basis for comparative analysis, Rust held that it could provide a more reliable depiction of reality than existing frameworks.

Shortly after Rust's address, Paulston, who had been experimenting with mapping theories in comparative education discourse since the 1970s, traveled to the University of British Columbia in Vancouver in 1991 to contemplate new ways of seeing in postmodern geography, French poststructuralism, and feminist cartography (Paulston, 1977, 1997). By the time he returned to the University of Pittsburgh, he had begun to understand how "maps not only emphasize spatial relations, they also recognize and help to pattern difference. By naming and classifying, maps helps us 'know' something so we can 'see' something different" (Paulston, 1996, p. xvii). This understanding, which embraced Rust's call for the application of postmodern theories to emerging representations of reality in comparative education discourse, not only resulted in a map of theoretical perspectives in the field of comparative education, but also established the phenomenographic roots for the postmodern mapping rationale that Paulston would eventually call social cartography.

For one of his initial conceptualizations, Paulston (1993) suggested that theory mapping, as a form of semiotic representation, could provide comparative educators with a means for orienting themselves within the field. This was important not only because knowledge constructs were becoming increasingly diverse and fragmented, as illustrated by the emergence of new and often contradictory theories, but also because new ways of seeing required new ways of thinking about how knowledge is constructed. As the struggle over classifications intensified, he argued that "social and intellectual worlds may be uttered and constructed in different ways according to different principles of vision and division, that failing to construct the space of positions leaves you no chance of seeing the point from which you see what you see" (p. 101). Without maps, in other words, without a way to visualize difference, it would be difficult for educators with diverse worldviews to work together as a global community of scholars.

In 1994, three years after Rust's address and just one year after his first attempt to construct a cartography of relations, Paulston co-authored two articles with Liebman that demonstrated how the introduction of a visual discourse could move social research beyond the positivistic restraints of modernism. In the first article, which served as an invitation to social cartography, they showed how social maps "help to present and decode immediate and practical answers to the perceived locations and relationships of persons, objects and perceptions in the social milieu" (Paulston & Liebman, 1994, p. 215). In the second, they extended their argument by identifying different types of maps that "provide an inside view, a visual dialogue of cultural flow and changing influences appropriate for future work in comparative education, particularly in those instances where cultural values and differences are revealed by competing knowledge claims," and demonstrated how educators could use these maps to further their research (Liebman & Paulston, 1994, p. 244).

Paulston and Liebman's (1994) invitation to social cartography offered comparative researchers a way to visualize difference and enhance the presentation of their findings. As a direct response to Rust's challenge to counteract the totalizing influence of modernity, they argued that maps can reveal both acknowledged and perceived cultural clusters while leaving space for future groups and ideas to be added to the intertextual mix. They tasked social cartographers, as agents of representation, "[to] look for the small and large erosions and eruptions of the social masses for the opportunity to map changes, to analyze and interpret events" (Paulston & Liebman, 1994, p. 218). Paulston and Liebman admitted that critics may question the legitimacy of social maps—social cartography, after all, is a subjective method for organizing social and cultural space—but they maintained that maps that emerge from intense phenomenographic research are useful for opening social dialogue.

In the follow up to their initial argument, Liebman and Paulston (1994) expanded their thesis by identifying three types of maps, the phenomenographic, the conceptual, and the mimetic, that comparative researchers could use to enhance their findings. A phenomenographic map, as a cartography of thought, is extensively researched and may take any form presenting the reader with information about phenomena in relation to each other. A conceptual map, which is more open to the mapper's worldview and may not necessarily reflect *serious* research, illustrates perceived relationships within or between categories. And a mimetic map, which should be understood in the postmodern context of challenging stability and privilege, imitates a reality. Liebman and Paulston allowed that "[these] types are not hard and fast, but often overlap…[motivating] mapping ideas and [providing] mappers with origin points to develop a significant map illustrating a research perspective" (p. 240). The majority of Paulston's maps, for example, are most accurately described as conceptual-phenomenographic landscapes.

In order to justify their new tool for comparative studies, Paulston and Liebman appropriated ideas from cognitive mapping, geographic cartography, and postmodern theory. From Downs and Stea (1973), for example, they took a definition for cognitive mapping as the description for the process in which social cartography is conceived. Similarly, from Harley (1989), whose work in geographical cartography was grounded in iconological and semiotic theory, they found a justification for opening maps to the needs of those who use them rather than restricting utility to those who create them. It was from the postmodernists, however, from the work of Baudrillard, Foucault, and Lyotard, among others, that Paulston and Liebman (1994) found the most support for offering social cartography to educators as "a new and effective method for counter hegemonic boundary work by visually demonstrating the sensitivity of postmodern influences in opening social dialogue" (p. 232).

4.0.1 Cognitive Foundations

Downs and Stea (1973) define cognitive mapping as "a process composed of a series of psychological transformations by which an individual acquires, codes, stores, recalls, and decodes information about the relative locations and attributes of phenomena in [the] everyday spatial environment" (p. 9). Underlying this definition is the assumption that spatial behavior is dependent on how individuals navigate cognitive maps of their surroundings. Unlike geographic maps, which can offer similar views of the same space, no two cognitive maps are alike. This is because the way that people perceive space is influenced by what they value. Even though two people can view the physical layout of a church in the same way, for example, it might hold a different significance for them as a sacred, profane, or neutral space.

Applied to social cartography, the way in which spatial information is individually coded ensures that each map is a unique object. "Initially, each map…contains some part of that person's knowledge and understanding of the social system" (Paulston & Liebman, 1994, p. 223). Before social cartographers begin to sketch the borders of their maps, they must first navigate an internal image of how they understand not only their boundaries, but also the relationships of the claimants that will eventually inhabit them.

According to Downs and Stea (1973), here the term *map* designates a functional analogue. "The focus of attention is on a *cognitive* representation which has the *functions* of the familiar *cartographic* map but not necessarily the physical properties of such a pictorial graphic model" (p. 11). While this was useful for conceptualizing the ways that people formulate their own interpretations of space, Paulston and Liebman needed to explore the work of geographic cartographers next in order to justify the forms of their social maps.

4.0.2 Geographic Foundations

Cartography is usually defined as "a body of theoretical and practical knowledge that map makers employ to construct maps as a distinct mode of visual representation" (Harley, 1989, p. 3). In the context of maps portraying geographical relationships, this theoretical and practical knowledge can be observed in the way that cartographers choose to represent "territories and neighborhoods…global disputes and regional conflicts…[and] causes and correlations involving areal differences, regional clusters, and other spatial patterns" (Monmonier, 1993, p. 3). For social cartographers, mapping—the visual, two-dimensional organization of information, which can help readers see how academic work has been processed, analyzed, and interpreted—is also an effective tool for representing spatial relationships.

In addition to cognitive mapping perspectives, which emerged from humanistic psychology, Paulston and Liebman (1994) also considered semiotic perspectives, which have roots in literary theory where exegesis is used to map texts and tropes, and geographical perspectives, which map symbolic space in the realm of cultural geography. These perspectives are not discrete, often overlapping in their epistemological assumptions from the mimetic to the heuristic, and Paulston and Liebman selectively appropriated rationales and examples from this earlier history of conceptual mapping and reinscribed them in their critical mapping project.

One of their biggest influences during the formation of social cartography was the postmodern geographer J. B. Harley. In "Maps, Knowledge, and Power," Harley (1988) demonstrated how a history of maps can be interpreted as a form of discourse. Drawing on literary criticism, which helps us view maps as a kind of language capable of being evaluative, persuasive, or rhetorical—Erwin Panofsky's formulation of iconology—which enables us to decode deeper levels of meaning that maps possess—and the sociology of knowledge—which

frames cartography as a form of power—he argued for a new way of seeing in which maps were understood as social constructions rather than reflections of an empiricist ideology which attempted to represent the world as it really is.

What was particularly important about Harley's work on the ideological contours of maps was that it promoted a social turn in cartography that emphasized the importance of maps as social constructions rather than as impersonal types of knowledge that "foster the notion of a socially empty space" (p. 303). In Harley, Paulston and Liebman found an opportunity to subvert the use of maps as a reifying power, one that reinforces the status quo, and promote the use of maps as a language capable of providing a voice to the voiceless through the opening of social space for all claimants. Even though it would be difficult, if not impossible, to create a map that included every possible perspective on a particular issue, Harley's framework reinterprets *empty space* as *silence*, which suggests that social maps do not so much exclude claimants from the social landscape so much as they provide an opportunity for them to *speak up*.

This notion of reinscribing *nothingness* as *potential* is especially salient for social cartography because it supports the need for re-mapping and counter mapping, the process of revisiting social maps as new claimants are identified or new knowledge is *constructed* that can lead to the inclusion of more perspectives. In much the same way that geographic maps demonstrate relationships, most commonly spatial relationships, so too do social maps demonstrate how "the researcher's perceived application, allocation, or appropriation of social space by social groups at a given time and in a given place" offer the opportunity to communicate how we perceive social change (Paulston & Liebman, 1994, p. 215). For Paulston and Liebman, this opportunity was most readily observed in the work of the postmodernists.

4.0.3 Postmodern Foundations

In the *Postmodern Condition*, Lyotard (1979) described modernity as the age of metanarrative legitimization and postmodernism as the age of fragmentation and pluralism. A metanarrative, in this sense, is a totalizing story about the history and the goals of the human race, such as the idea that history is progressing toward emancipation, and the legitimization of such a story is nothing short of an act of violence against other narratives in the cultural surround.

For Lyotard, legitimization is a question of knowledge and power: namely, who gets to decide what knowledge is, and, perhaps even more importantly, who knows what needs to be decided in the first place? In order to analyze, if not answer, this question, he turned to the language games originally theorized by Ludwig Wittgenstein. This theory posits that the various categories of utterance—such as the denotative, which attempts to identify the object to which the utterance refers ("Knowledge is subjective"), the performative, which is a performance in and of itself ("I will"), and the prescriptive, which instructs, recommends, requests, or commands ("Draw a map")—are defined in terms of rules specifying their properties and uses.

In modernity, for example, the narrative of science, which holds that only knowledge that is legitimated through a specific process involving reproduction, is reinforced by the Hegelian metanarrative that speculates on the eventual unification of all knowledge and the Marxian metanarrative that gives science a role in the emancipation of humanity. Lyotard, however, sees a danger in the dominance of scientific knowledge over more subjective kinds of knowledge, such as narrative knowledge, which is based on tradition and rituals, because he contends that a view of reality that excludes other discourses or representations of events will miss certain aspects of what is held to be true (Best & Kellner, 1991).

41

In postmodernity, which heralds the demise of metanarratives, knowledge is legitimized by the performative. This mercantilization of knowledge leads to a commodification of truth, which in turn leads to erudition. In order to reach a space where research does not seek to produce truth, Lyotard argues that a paralogic approach to research views reason not as a universal human faculty but as a specific and variable product of individual engagement. In this way, research combined with the legitimization of knowledge by paraology would satisfy both the desire for justice and the desire for the unknown (Lyotard, 1979).

Social cartography, as a paralogic approach to educational research, satisfies Lyotard's conditions for unraveling the metanarratives of modernity. Instead of doing away with metanarratives completely, which would defeat the purpose of opening social dialogue in the first place, Paulston and Liebman's (1994) mapping rationale suggests a synthesis of multiple narratives in a two-dimensional space where they can be simultaneously questioned and explored in context. While there is still a question of knowledge and power—how does the mapper decide which narratives, macro- and micro- alike, to include on the map?—there is an understanding that all maps that claim to be created through the process of social cartography are open to thoughtful revision.

After aligning with Lyotard in his dismissal of metanarratives as totalizing vehicles of truth, Paulston and Liebman joined Rust in his search for *the silent blueprint to life* by turning to Star's (1991) work in grounded theory for making the invisible visible. Her five rules, which "help us track omissions and understand the mechanisms of power tied to the deletion of certain kinds of practical work," provided "a powerful rationale for reflexive practice [that opened] up mapping opportunities to all cultural communities in [a shifting] intellectual field" (Paulston & Liebman, 1994, p. 218).

The Rule of Continuity suggests that there is no such thing as dualism. Rather than being created in response to an outside stimulus, this implies that objects come into existence "by overleafing stratified networks originating from radically different points" (Star, 1991, p. 277). While power then resides in the imposition of a position in space, acknowledging that objects have different rhythms may help identify narratives that occupy overlapping spaces.

The Rule of No Omniscience holds that nobody is exempt from having a viewpoint; everyone, in fact, has several, depending on the context. The only way we can know truth, as socially constructed phenomena, is through the articulation of multiple viewpoints. For Star, "*every* viewpoint is a part of some picture, but not the whole picture" (p. 278). For Paulston and Liebman, a social map is just one mapper's viewpoint rendered in two-dimensional space, open to the inclusion of new perspectives that the mapper might not be aware of.

The Rule of Analytical Hygiene theorizes concepts as *verbs* rather than as *nouns*. This means that the tensions between invisible things and the concepts they create should be dynamic and reconfigurable yet solid enough to avoid losing their individuality. Star uses the example of Lev Vygotsky's zone of proximate development to show how a concept can be extrapolated by several scholars without being distorted beyond the confines of its original meaning. In terms of the mininarratives that social cartography strives to uncover, this suggests that mapmakers need to be open to the inclusion of perspectives that might not fit the previously reified categories that they are comfortable with.

The Rule of Sovereignty demonstrates how every standpoint has a cost associated with it. Star contends that "[in] order to analyze the costs and nature of these standpoints, we need closely to attend to the flow of resources and the negotiations involved therein" (p. 279). For social cartographers, this means that the positions of claimants on the map must be meticulously

43

researched. It is the cartographer's responsibility to not only position actors with respect to the map's boundaries, but also to each other.

Finally, the Rule of Invisibility supposes that successful attempts to make something invisible require the assertion of power that resides in the fundamental pluralism of human interaction. There are many ways to make things invisible—"rendering certain kinds of work invisible, reifying invisible things, and then secretly, privately, or duplicitously claiming the resources rightfully belonging to the work"—but the more successfully a tactic is employed the more violent its results (p. 279). In geographical cartography, for example, in order to make something invisible, one simply has to remove it from the map. History is full of the *maps of victors* who erased or excluded entire populations with the stroke of a pen. Once again, consider the early maps of the New World, for example, that totally ignored the natives' claim to space.

There is, of course, power exerted in the construction of social maps. Rather than presenting their maps as absolute, however, social cartographers offer their work with an understanding that their exercises in world-making are open to revision. In her sociology of the invisible, Star "[challenged] the erasing process as the central human behavior concern, and then tracked that comparatively across domains" (p. 281). By appropriating her ideas as a theoretical foundation of social cartography, Paulston and Liebman established the unveiling of metanarratives as one of its primary concerns, furthering their rationale that maps are capable of counteracting the totalizing effects of modernism.

By way of Jean Baudrillard, Paulston (1993) distanced his perspectivist maps from the foundational maps of modernism. He began with an idea from cognitive mapping that social maps are unique objects. From here he made the connection to Baudrillard's (1990) contention that art and life shape the system of objects, that descriptive systems, which are collections of

knowledge objects around a "point where forms connect themselves according to an internal rule of play," carve out truth (p. 27). While Paulston and Liebman (1994) found that maps, as agents of art and life, can shape the system of objects, they suggested "that rather than carve out a truth they instead portray the mapper's perceptions of the social world, locating in it multiple and diverse intellectual communities, leaving to the reader…a portrait—art representing the possibilities portrayed by being open to the world's multiple cultural truths" (p. 223).

This distinction between truth and art is important, especially in the context of social cartography, because it further separates perspectivist maps (knowledge generators) from modernist maps (representations). Modernist geographic maps, for example, limit the knowledge of readers by controlling not only what is included or excluded, but also by determining how what is included is portrayed. For Baudrillard (1990), such a map "is bogus to the extent that it presents itself as authentic in a system whose rationale is not at all authenticity, but the calculated relations and abstractions of the sign" (pp. 35-36).

Even though Paulston and Liebman suggested that perspectivist maps are open to all ways of seeing, the question is if such self-awareness is enough to escape the hegemonic influence of modernist maps on postmodern cartography. After all, it is impossible for even the most inclusive maps to make room for every perspective, limited as they are by the experiences of the mapmakers. In order to support their rationale for social cartography, Paulston and Liebman relied on Baudrillard's (1990) critique of modernist objects, "as the exaltation of signs based on the denial of the reality of thing," to define their maps as subjective rather than objective, misdirected truth (p. 63).

In order "to create a social cartography able to visualize and pattern multiplicity, be it multiple perspectives, genres, arguments, or dreams," Paulston (1999, p. 453) borrowed from

Foucault's (1986) conceptualization of heterotopic space. In contrast to utopias, which Foucault theorized as sites with no real place, heterotopias are *counter-sites*, spaces of differences that stand apart yet maintain relations with other, less prescribed spaces. According to Foucault, they are formed in the founding of society and provide a space in which "all the other real sites that can be found within the culture, are simultaneously represented, contested, and inverted" (p. 24). Heterotopias, in other words, are sites in which the postmodern process can be viewed in action.

In order to explain the applicability of heterotopias to reality, Foucault (1986) offered five principles for reading these simultaneously mythic and real contestations of space: (1) All cultures constitute heterotopias; (2) Heterotopias have a precise function in a society that can change over time; (3) Heterotopias are capable of juxtaposing several spaces in a single space in which they themselves are excluded; (4) Heterotopias are linked to breaks in time, identifying with quasi-eternal spaces, such as cemeteries, as well as temporal spaces, such as fairgrounds; and (5) Heterotopias, like both prisons and purification rituals, are both isolated and penetrable (pp. 24-26). The most applicable of these traits to social cartography is that heterotopias have a function in relation to all space outside of themselves, existing as it were between two or more mutually-inclusive poles.

For Foucault (1986), "either their role is to create a space of illusion that exposes every real space…Or else, on the contrary, their role is to create a space that is other, another real space, as perfect, as meticulous, as well arranged as ours is messy, ill constructed, and jumbled" (p. 27). Drawing on the latter, albeit compensatory role of heterotopias, which suggests that such liminal spaces are capable of synthesizing order out of chaos, Paulston and Liebman (1994) demonstrated how the intertextual field of perspectivist mappings creates something new in the very act of depiction.

In addition to using Foucault's definition of heterotopic space to describe the intertextual field at the heart of perspectivist maps, Paulston also drew on what Foucault called a *spatial panopticon* to describe how maps can help readers develop an awareness of excluded knowledge. A panopticon is a system of surveillance, such as a prison or a workhouse, in which all parts of the interior are visible from a single point. In the context of a panoptic prison, for example, it is possible for a single guard to monitor all of the prisoners at the same time from the same place. According to Foucault (1978), "this enclosed, segmented space, observed at every point, in which the individuals are inserted in a fixed place, in which the slightest movements are supervised, in which all events are recorded…all this constitutes a compact model of the disciplinary mechanism" (p. 197). While this definition of *panoptic* as *all inclusive* may seem problematic, having already established that it is impossible to include all perspectives on a single map, Paulston and Liebman (1994) nevertheless saw *panoptic space* as a valuable metaphor for social cartography, especially in the context of omniscience.

Because social cartographers strive to map the total of those parts or elements of a system of objects, which is the product of their individual experiences, it makes sense that perspectivist maps are *omniscient* in the sense that researchers are offering the extent of their own perceptions for consideration in the social milieu. The distinction here is that rather than presenting their maps as undisputable knowledge, social cartographers actually encourage their readers to challenge their ideas with hopes of collaborating on more and more inclusive maps. If the major effect of Foucault's (1978) panopticon is "to induce in the inmate a state of conscious and permanent visibility that assures the automatic functioning of power," then the major effect of Paulston and Liebman's appropriation of panoptic space is to provide readers with a vantage point to observe, in one place, various ideas and perceptions.

4.1   PAULSTON'S TYPOLOGY FOR MAPPING VISUAL CULTURE

One of Paulston's (1997) most salient contributions to educational research was a typology for mapping visual culture. This typology, which appropriates the scopic regimes of modernity and added the scopic regime of postmodernity as the principle modes of representation, was developed in response to Jay's (1988) challenge to map visual subcultures and framed by the following research questions:

1. Does [a new visual aesthetics based on a paradigm of cultural de-differentiation] free the image from the dictates of narrative meaning and rule-bound formalisms that have predominated under modernity's sway?;

2. How might an examination of changes in the visual culture of our field before and after the postmodern turn increase our understanding of the emergence of social mapping as a kind of cognitive art or play of figuration?; and

3. Does this visual turn in representing the multiple realities of our field today result in, as claimed, a new distinct mode of visual representation where space is used to represent a spatial dispersion that offers, when *combined* with discourse analysis, a system of possibility for new knowledge? (Paulston, 1997, pp. 117-118)

In order to answer these questions, Paulston identified the ways in which researchers used images to enhance their findings. His initial study, which examined 28 illustrative examples of visual culture from leading journals, classified these images into four categories that corresponded to the scopic regimes and modernity and postmodernity, each with its own favored rhetoric and modes of representation: technical rationalist, critical rationalist, hermeneutical constructivist, and deconstructive perspectivist (see Table 4).

4.1.1 The Technical Rationalist Perspective

The technical rationalist perspective favors a geometricized concept of space. "It is characteristically much concerned with hierarchy, proportion and analogical resemblances. It seeks—by presenting an abstract and quantitatively conceptualized space—to de-eroticise the visual order, to foster de-narrativisation, de-textualisation and de-contextualisation" (p. 122). According to Paulston, the scopic regimes of modernity inhabit an objective, albeit arbitrary, reality where the observer, as well as the cartographer, is characteristically removed. The reality is arbitrary because it could just as easily be represented as a table, a matrix, or a list bound with vertical and horizontal lines. Perhaps even more importantly, these representations foster a conflictual dualism where alternate perspectives are excluded.

4.1.2 The Critical Rationalist Perspective

The critical rationalist perspective presents a visualization of structured subordination. Unlike the technical rationalist perspective to which it is related in forms of representation—that is, realist, materialist, logocentric, and melioristic—this perspective polarizes social groups and represents a commitment to dialectical analysis in order to expose inequality. For Paulston (1997), "the [critical rationalist] view problematizes [hierarchies presented as truth by the technical rationalist perspective] with notions of correspondence and reproduction, and seeks to overturn it in favor of more egalitarian structures" (p. 125). This perspective also constructs an arbitrary reality where the cartographer has been removed. Even though critical rationalist representations seek to identify inequality, they do so by excluding viewpoints that differ from their own.

4.1.3   The Hermeneutical Constructivist Perspective

The hermeneutical constructivist perspective engages in intersubjective world-making. It rejects the notion of Cartesian detachment, and, in doing so, opens itself to narrative, art, and indeterminacy. This perspective relies on metaphor, which Paulston described as "the last magic on earth," to "stoutly [defend] the centrality of desire, and the possibility for joy" (p. 128-130). Furthermore, it constructs reality as a dynamic process rather than as something that can be mimed or reproduced, and encourages claimants to explore their world "without logocentric determinants or frozen spatial choices" (p. 132). The hermeneutical constructivist reality, in other words, is framed as an ongoing process, rather than as a mimetic representation.

4.1.4   The Deconstructive Perspectivist Perspective

The deconstructive perspectivist perspective, which is the perspective of Paulston's social maps, accepts and reinscribes all theories, codes, language games, simulations, and visual forms. Unlike the scopic regimes of modernity, this perspective escapes the restrictions of logocentric enclosure, avoids conflictual dualism, and situates the cartographer on the map. From this perspective, "social mapping escapes the violence of logocentric enclosure and instead elicits an embodied discourse system or set of readings that are frequently disrupted and in need of reordering" (p. 149). Deconstructive perspectivist maps are open-ended and subject to change. Furthermore, they are knowledge generators rather than representations of knowledge, and, as such, each point on a deconstructive perspectivist projection can be combined with any other point in order to construct new forms of knowledge.

Table 4. Paulston's typology for mapping visual culture

	Scopic Regime	Mode of Representation	Rhetoric	Research Paradigm(s)
Modernity	Technical Rationalist	Line Graph Matrix Pie Chart Table Tree Chart	The TR perspective often displays a mimetic representation of reality where the observer is assumed to be independent of the observed phenomena. It favors a geometricized, intellectual concept of space.	Positivist
	Critical Rationalist	Matrix Pictograph Pie Chart Polar Area Diagram Table	Where the TR view assumes consensus and sees and accepts hierarchy, the CR view problematizes that hierarchy with notions of correspondence and reproduction, and seeks to overturn it in favor of more egalitarian structures.	Critical Theorist Positivist
	Hermeneutical Constructivist	Art Cartogram Citation Network Radial Convergence Steamgraph	Work in the HC tradition seeks to pattern the process of intersubjective world-making. It is open to narrative, art, and indeterminacy. It prizes insight and determination, while demanding credibility, and refuses to be boxed in.	Interpretivist
Postmodernity	**Deconstructive Perspectivst**	Area Grouping Centralized Ring Organic Rhizome Social Map Steamgraph	The DP perspective opens space to all claimants. It accepts and reinscribes all theories, codes, language games, and visual forms, and shows the mapper to be alive to the fact that there are other powers and perspectives in the world.	Deconstructivist Interpretivist

51

4.2   THE MAPS OF SOCIAL CARTOGRAPHY

After the publication of Paulston and Liebman's (1994) articles, which established social cartography as the postmodern offspring of cognitive mapping and geographic cartography, Paulston began to expand the Social Cartography Project by soliciting work from his students and colleagues. This resulted in the publication of two important works in 1996: *Mapping Multiple Perspectives: Research Reports of the University of Pittsburgh Social Cartography Project* and *Social Cartography: Mapping Ways of Seeing Social and Educational Change*.

Mapping Multiple Perspectives was a collection of the first conference papers and essays specifically written about social cartography. In addition to Paulston's (1993) initial conceptualization of mapping in comparative education discourse and Paulston and Liebman's (1994) two article introduction to social cartography, it also included Nicholson-Goodman and Paulston's (1996) mapping/remapping of discourse in educational policy studies, Liebman's (1996) exploration of postmodernity's influence in comparative education theory and debate, and an early version of Paulston's (1996) typology for mapping visual culture.

Social Cartography was an even more ambitious project, featuring 19 essays from new and established scholars representing a multitude of disciplines. Even though some of the authors did not entirely embrace Paulston's postmodern mapping project, they all engaged with his ideas in such a way as to advance the rationale for mapping in comparative education discourse. The book was well-received—Epstein (1998, p. 1), for example, described it as "an ambitious attempt to address educational issues from an innovative perspective"—and researchers appeared to accept social cartography as a reflexive methodology for representing spatial relationships among diverse perspectives in the field.

The question of what exactly constitutes a map, especially in the form that Paulston advocated, has been debated since the introduction of social cartography. In a review of *Social Cartography*, for example, Brady (2000) described the instruction that Paulston and his colleagues provide as potentially "problematic," because "some free spirits see mapping only as… a prison house of fixed vision," which, to be fair, is a criticism leveled at all forms of cartography (p. 88). Similarly, Widlok (2000) argued that "most contributors to this volume are not particularly inclined to operationalize social cartography for problem solving," perhaps because "there seems to be a point of diminishing returns where the mapping process becomes increasingly pointless" (p. 158). Rather than a point of *diminishing returns*, however, it is more likely that the contributors were simply unfamiliar with Paulston's methodology. Instead of insisting on a universal method, Paulston encouraged his colleagues to work within their own understanding of a visual discourse (Ito, 2001).

Even though Paulston (1997) described all of the images he found in his review of the literature as *maps*, even common charts and tables, it is important to remember that this does not necessarily make them examples of social cartography. Where modernist figurations—technical rationalist, critical rationalist, and hermeneutic constructivist maps (representations)— represent space as a place where objects are situated within fixed boundaries, postmodern figurations— deconstructive perspectivist maps (knowledge generators)—conceptualize space as contested territory with shifting sites in porous boundaries. Even though postmodern maps may retain some aspects of modernity—Paulston suggested that "[the] retention of a [critical rationalist] problematic within a field of multiple perspectives…is the challenge that defeats, or eludes, most critical theory advocates" (p. 147)—they nevertheless help make visible ideas and relations that might otherwise remain hidden.

After the publication of *Social Cartography*, as the Social Cartography Project began to expand at the University of Pittsburgh, Paulston (1999) started to reflect on how the deconstructive perspectivist perspective was being employed in the discourse. Amidst a discussion of knowledge positions constructing the postmodernity debate, he hesitantly described a *cookbook framework* for representing ways of seeing in texts, much to the chagrin of his postmodernist colleagues:

1. Choose the issue or debate to be mapped;

2. Select the widest range of possible texts that construct this debate and, with close reading, translate their defining rhetorical characteristics, ideas, and world views;

3. Identify the range of positions in the intertextual mix;

4. Identify the textual communities that share a way of seeing and communicating reality; locate them within their space and interrelate communities of vision with space, lines, arcs, arrows, or the like;

5. Field test the map with the individuals or knowledge communities involved. Share the conflicting interpretations and remap as desired. (pp. 453-454)

Once the boundaries of a social map have been established and the relationships among the claimants have been decided, the cartographer now has a responsibility "to explicate what point of view is being utilized in the study, to disclose the interrelations of the field or site itself, and to convey something of the personal or professional experiences that have led him or her to choose a particular point of view" (p. 454). Paulston was reluctant to provide a framework for making social maps; however, he did so because he realized, at that point in his career, that it was important to demonstrate to his critics that social cartography was more than just a simple process of juxtaposing texts.

4.2.1 Mapping Discourse in Comparative Education Texts

Paulston's (1994) first perspectivist map explored the increasingly complex conceptual relationships among the major discourse communities that composed the field of comparative education. In Figure 8, the four paradigms and 21 theories he identified are presented in heuristic fashion, meaning that the map is intended to help readers discover something about the field for themselves, and the overlapping circles that make up its borders are an attempt to move beyond the false dichotomies and arbitrary oppositions that less *open* representations might suggest. Space is arranged along the horizontal axis from idealist-subjectivist orientations on the left to realist-objectivist orientations on the right. Similarly, space is arranged along the vertical axis from equilibrium orientations on the bottom to transformation orientations on the top. The arrows connecting the paradigms to the theories are meant to suggest interaction rather than movement, and the length of the lines represents the extent of those interactions. Unlike Figure 2, an earlier version of the same map, Figure 8 includes the mapper's perspective.

According to Paulston (1993), "all maps contrast two interdependent planes of reality—the ground or territory to be mapped, and the map of the territory. Accordingly, any map is a construct, a conceptual configuration that has been thematized, abstracted and lifted from the ground to another plane of meaning" (p. 21). In Figure 8, this means that the map provides an opportunity for readers to visualize distinctive characteristics or essential structures of the paradigms and theories that might not be apparent from more temporal or objectified sources. Even though conceptual mapping can be used to create distorted or authoritarian images, it can also be used to challenge epistemological myths and make the invisible visible in such a way that encourages the expansion of textual discourse.

55

TRANSFORMATION ORIENTATIONS

OF CONSCIOUSNESS

OF STRUCTURE

"Can be"

RADICAL HUMANIST

CRITICAL THEORY

NEOMARXIST

FEMINIST

CRITICAL ETHNOGRAPHY

POSTSTRUCTURALIST

CULTURAL RATIONALIZATION

*

IDEALIST-SUBJECTIVIST ORIENTATIONS

SOLIPSISM

PHENOMENOGRAPHIC

MAPPER

ETHNOGRAPHIC

PRAGMATIC INTERACTIONIST

HUMANIST

"Be-ing"

"Will be"

RADICAL FUNCTIONALIST

HISTORICAL MATERIALIST

DEPENDENCY

CONFLICT THEORY

NEOFUNCTIONALIST

MODERNIZATION

HUMAN CAPITAL

RATIONAL CHOICE

REALIST-OBJECTIVIST ORIENTATIONS

SCIENTISM

FUNCTIONALIST

"Must be"

OF CULTURE

EQUILIBRIUM ORIENTATIONS

OF SOCIETY

Issue or Debate	paradigms and theories in comparative and international education texts	
Range of Texts	conflict theory, critical ethnography theory, critical theory, dependency theory, cultural rationalization theory, ethnographic theory, feminist theory, etc.	
Range of Positions	idealist-subjectivist orientations realist-objectivist orientations	equilibrium orientations transformation orientations
Knowledge Communities	functionalist, humanist, radical functionalist, and radical humanist	

Figure 8. Mapping Discourse in Comparative Education Texts (1994)

4.2.2 Remapping Discourse in Comparative Education Texts

At Paulston's invitation, Rust (1996) contributed to *Social Cartography* by creating his own map

of comparative education as an intellectual field, via an elaboration and reconstruction of

Paulston's initial perspectivist map (see Figure 9). Instead of locating the field of his map in two

overlapping circles, Rust used a matrix composed of two intersecting axes. He did, however, opt

to keep Paulston's basic coordinates—personal orientations on the left, scientific orientations on

the right, equilibrium orientations on the bottom, transformation orientations on the top—so he

did not "have to engage in an extended review of the texts and [could] simply refer the reader to

the sixty texts Paulston [already] interrogated" (p. 47).

Rust admitted that his figuration is limited insofar as it does not provide much in the way

of comparative data concerning the various theoretical orientations on the map. There is no

indication, for example, of how the exchange of ideas works between knowledge communities.

In some ways, however, Rust's map goes beyond Paulston's by demonstrating some of the

different kinds of relationships that exist among the theoretical orientations. Whereas the arrows

on Paulston's map merely suggested various levels of interactions between the paradigms and

theories in the intertextual mix, the lines on Rust's map make distinctions between critical and

borrowing relationships, and furthermore provide an opportunity to visualize the frequency of

exchange between the claimants. Considered separately, Paulston's map and Rust's map both

provide comparative educators with a way to visualize themselves in relation to the theoretical

orientations in their field. Considered together, however, the knowledge that the maps produce,

vis-à-vis *conversation*, is perhaps even more beneficial as it allows for an open exchange of ideas

that might help educators view the field in different ways.

Transformations

Critical theory

Feminism

Historical materialism

Post-structuralism

Neo-Marxism

Dependency

Structural rationalization

Conflict theory

Personal

Critical ethnography

Scientific

Phenomenography

Pragmatic interactionism

Human capital

Geofunctionalism

Rational choice

Modernization

Ethnography

Equilibrium

Legend
Theoretical orientation ●
Borrowing relationship ——
Critical relationship --------
Direction of interest ——→
Frequency of exchange ═══

Issue or Debate	paradigms and theories in comparative and international education texts	
Range of Texts	conflict theory, critical ethnography, critical theory, dependency, ethnography, feminism, geofunctionalism, historical materialism, human capital, etc.	
Range of Positions	personal orientations scientific orientations	equilibrium orientations transformation orientations
Knowledge Communities	N/A	

Figure 9. Remapping Discourse in Comparative Education Texts (1996)

4.2.3 Mapping the Social Geography of Honduran Community Groups

In his engagement with Paulston's postmodern mapping rationale, which appeared in *Social Cartography*, Mausolff (1996) adopted a pragmatic perspective, meaning that he focused on practical as opposed to theoretical concerns, to map the social geography of seven rural Honduran community groups. What he found, as he situated the groups in an intertextual field, was that the pattern that emerged from their positions "suggests that there may be some socialization taking place through involvement in the organized peasant movement," adding that "postmodernism's promotion of diversity and cultural relativism may have some relevance to the practice of development administration" (p. 268).

Mausolff's map is a particularly striking example of social cartography because it is composed of multiple dimensions: (1) the first dimension identifies the participants as either affiliated or nonaffiliated with the peasant movement; and (2) the second dimension identifies the participants by gender. While all of this information could have been portrayed in a single dimension, the decision to spread it across multiple dimensions gives map readers an opportunity to focus on one social identifier at a time (see Figure 10).

Each dimension is arranged along the horizontal axis from loving, sharing perspectives on the left to discipline, responsibility perspectives on the right. Similarly, each dimension is arranged along the vertical axis from land, economic benefits on the bottom to education, learning benefits on the top. While he was still hesitant to endorse postmodernism, Mausolff concluded his mapping project by arguing that "the practicality of [social cartography] suggests that practitioners can selectively appropriate from postmodern thought without having to buy into its more questionable elements" (p. 287).

Education, Learning

La Union
PRODAI

La Union
PRODAI

KEY:
Peasant Movement
Unaffiliated

Nueva Suyapa PRODAI

Ruth OCH

Loving, Sharing

Discipline, Responsibility

6th of May CNTC

Santa Cruz PRODAI

6th of May CNTC

Land, Economic Benefit

Education, Learning

F

M

KEY:
Male   M
Female   F
Mixed   B

Loving, Sharing

Discipline, Responsibility

B   F

M   F   M

Land, Economic Benefit
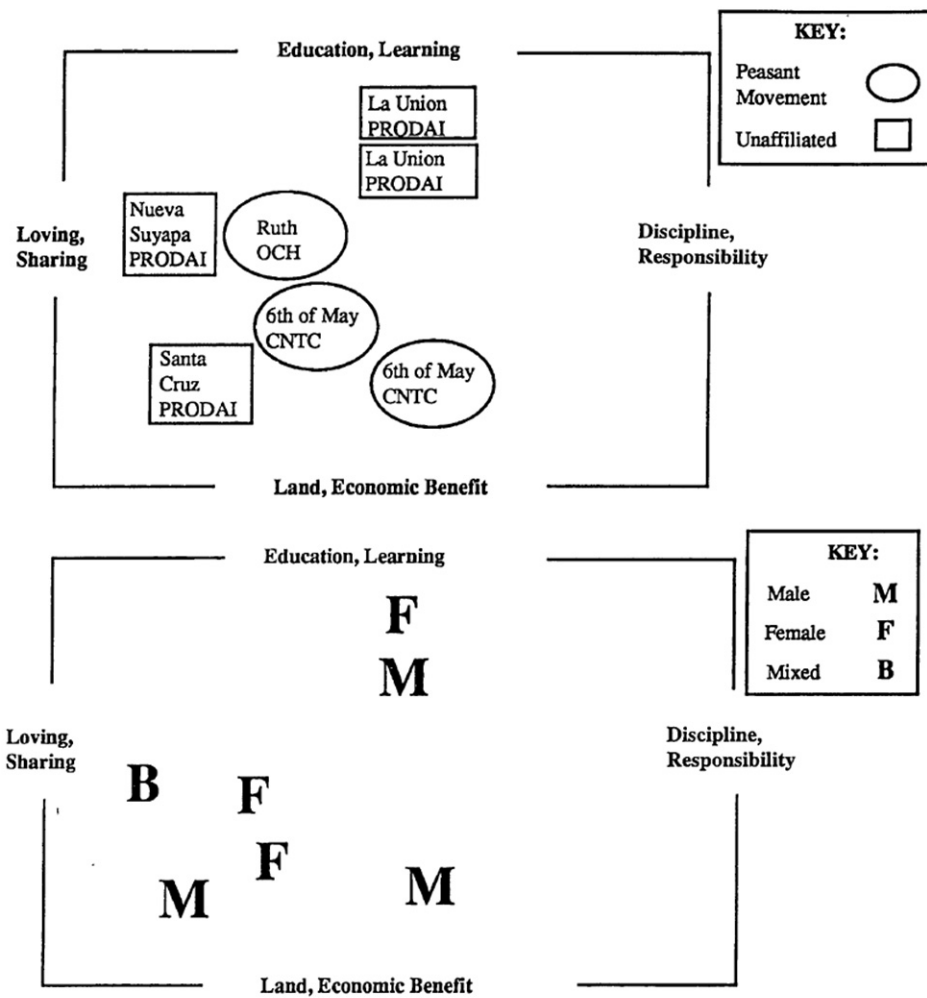
Issue or Debate	the social geography of seven rural Honduran community groups and their affiliation to the peasant movement	
Range of Texts	individual peasants from rural Honduras	
Range of Positions	loving, sharing discipline, responsibility	land, economic benefit education, learning
Knowledge Communities	rural Honduran peasant groups affiliated with Prodai, Organizacion Campesina Hondureno, and Central Nacional de Trabajadores del Campo	

Figure 10. Mapping the Social Geography of Honduran Community Groups (1996)

4.2.4 Mapping Major Perspectives in Environmental Education Discourse

Nicholson-Goodman's (1996) ludic approach to mapping environmental education discourse, which also appeared in *Social Cartography*, invoked the postmodern sensibility in order to explore new ways of seeing the relationships between humans, technology, and nature. According to Nicholson-Goodman, "Postmodernism as a sensibility is useful as a mediator in understanding the process of social cartography…in four ways, as it (1) makes space for diversity; (2) levels the playing field of perceptions; (3) highlights differences in ways of seeing knowledge claims; and (4) allows for ludic play in identity formation" (p. 320). In Figure 11, space is arranged along the horizontal axis from ecocentric perspectives on the left to anthropocentric perspectives on the right. Similarly, space is arranged along the vertical axis from materialist ways of seeing on the bottom to immanent ways of seeing on the top.

What is particularly striking about Nicholson-Goodman's map—or *orb*, as she describes it—is her use of the astronomical definition of *dichotomy*, which suggests that a planetary body is in a dichotomous state whenever half of its disc is visible, to describe its boundaries. Instead of setting up the poles of her map in opposition to one another, which can lead to exclusionary ways of seeing, this approach does away with conflictual dualism, encouraging a dialogue between opposing perspectives rather than supporting the struggle between warring ideological camps. For Nicholson-Goodman, the mapping process serves as a *koan*, a device from Eastern traditions that may produce an attitude of contemplation, and social cartography is viewed as "a reflexive practice involving the interviewing of texts and their value and power relations. More importantly, it creates space for the interviewer to ironically 'open out' her own value and power orientations as they play into the map's construction" (p. 322).

Immanence

DEEP ECOLOGY

THEOLOGY

RELATIONSHIP ASPECT

○ Smith

○ Fuller

○ Nicholson-Goodman

dimension

○ Gough

Ecocentric — axiological — dimension — Anthropocentric

○ Faulconer

epistemological

HUMANISM

○ Beck

○ Castro

○ Rubba and Wiesenmayer; Yager

○ Tudor

○ Shortland

○ Sponsel

ECOLOGY

RISK ASPECT

SCIENTIFIC

Materialist
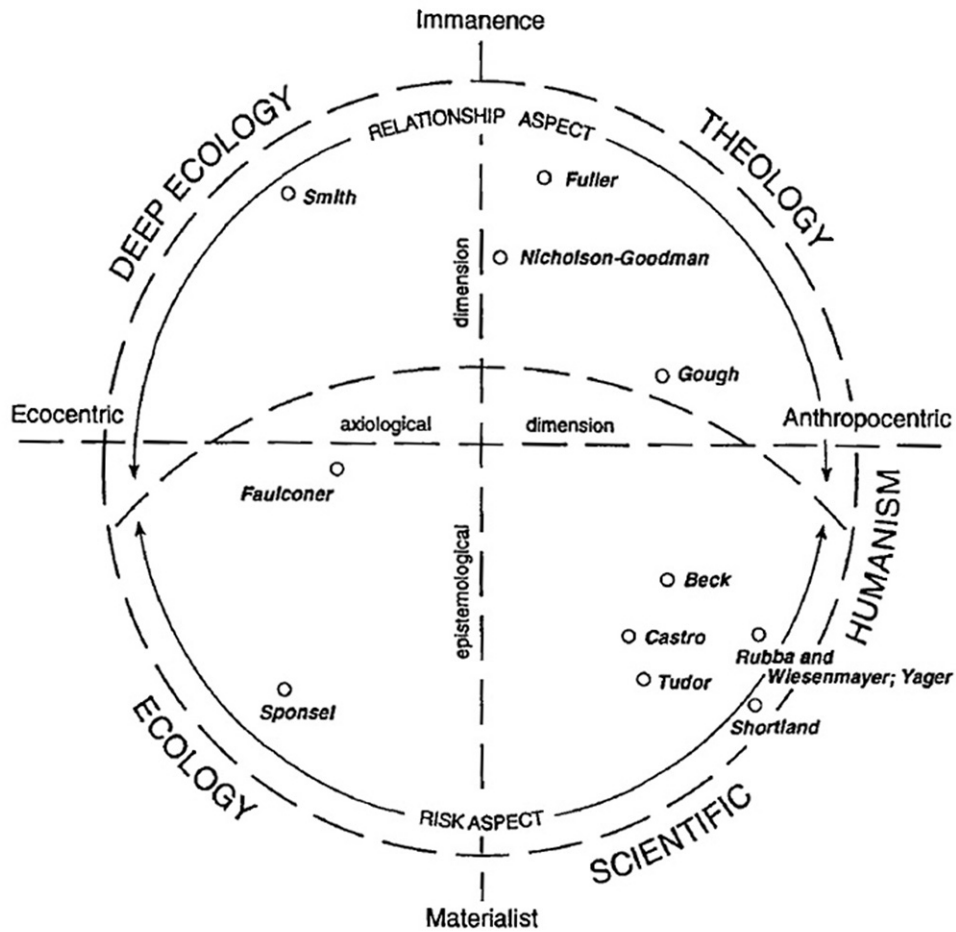
Issue or Debate	major perspectives in environmental education discourse	
Range of Texts	Beck, Castro, Faulconer, Fuller, Gough, Nicholson-Goodman, Rubba & Wiesenmayer, Shortland, Smith, Sponsel, Tudor, and Yager	
Range of Positions	ecocentric anthropocentric	materialist immanence
Knowledge Communities	deep ecology, ecology, humanism, scientific, and theology	

Figure 11. Mapping Major Perspectives in Environmental Education Discourse (1996)

4.2.5   Mapping Textual Contributions in *Social Cartography*

At the end of *Social Cartography*, Paulston (1996) mapped the textual contributions of

individual authors in the acentered style of Deleuze and Guattari (1987). In Figure 12, the

authors (subjects) are separated from their contributions (objects) in order to view their writing

practices as sites within an intertextual field. "From this perspective, social mapping seeks to

escape the violence of logocentric enclosure and instead elicits an embodied discourse system or

set of reading that are frequently disrupted and in need of reordering" (p. 437). Here, space is

arranged along the horizontal axis from constructivist worldviews on the left to essentialist

worldviews on the right. Similarly, space is arranged along the vertical axis from an emphasis on

representation on the bottom to an emphasis on transformation on the top. Within the map's

boundaries, Paulston identified six perspectives—the auratic, iconic, ideological, structural,

technical, and textual—that "serve as nodes to link texts in a complex web of relations where no

place/view is privileged over any other space or perspective" (p. 437).

Even though Paulston's colleagues described this map as *a mess*, its inherent complexity

belies a utility for separating the perspectivist mappings of social cartography from the

objectivist mappings of modernism. Whereas a technical rationalist figuration of the authors'

contributions may appear as a matrix—read, *table of contents*—enclosing the texts within frigid

boundaries and refusing to make distinctions beyond broad overarching categories, Paulston's

map gives readers a much better idea of how these sites are related to one another. "While

comparative mapping offers no immediate resolution of our present heterotopic crisis of

legitimacy, it does help both actors and communities provisionally represent and compare how

they experience our world as ever changing perceptual fields of discourse and debate" (p. 439).

63

Figure 12. Mapping Textual Contributions in *Social Cartography* (1996)
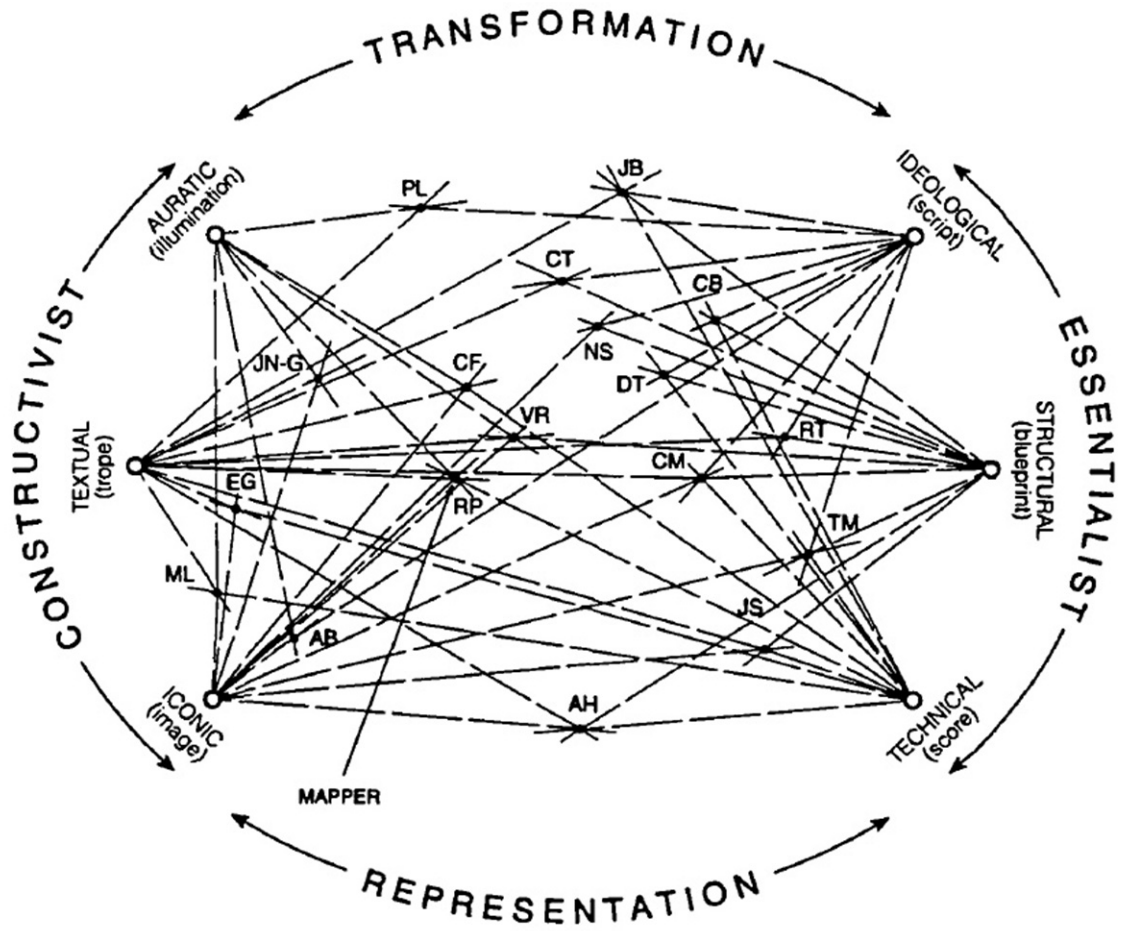
Issue or Debate	textual contributions by individual authors in *Social Cartography*	
Range of Texts	Bartolovich, Beverley, Buttimer, Fox, Gottlieb, Huff, Lather, Liebman, Mausolff, Mouat, Nicholson-Goodman, Rust, Seppi, Stromquist, Tally, Torres, and Turnbull	
Range of Positions	constructivist essentialist	representation transformation
Knowledge Communities	auratic: illumination, iconic: image, ideological: script, structural: blueprint, technical: score, and textual: trope	

4.2.6   Mapping the Scopic Regimes of Modernity and Postmodernity

Paulston (1997)'s map of the scopic regimes of modernity and postmodernity "demonstrates how postmodern figuration in the form of perceptual fields offers the eye a continuous and asymmetrical terrain of unhindered mobility" (p. 117). Space is arranged along the horizontal axis from heuristic ways of seeing on the left to mimetic ways of seeing on the right. Similarly, space is arranged along the vertical axis from differentiated ways of seeing, which gain specialization in form or function, on the bottom to de-differentiated ways of seeing, which lose specialization in form or function, on the top. The scopic regimes appear as nebulous clouds with porous boundaries, billowing around a point near the center of the map, and Paulston places himself on the map in a position that suggests his work exists at the intersection of multiple perspectives (see Figure 13).

Even though it is impossible to totally escape a discussion of power relations when it comes to mapping—there will always, for example, be questions of what to include and what to exclude—the act of explicitly stating the perspective from which the map was drawn goes a long way toward giving map readers a sense of the context in which it was created. Channeling the work of Fenton (1996), Paulston explained his decision to situate his own perspective on the map as a way of navigating the assemblage of contradictory yet complimentary cultural codes in the social milieu; "the act of attributing spirit to everything, giving every element of the landscape its own point of view, shows the [mapper] to be alive to the fact that there are other powers in the world, [that social cartography] is not a fantasy of omnipotence. It is a matter of doing your best in a difficult, hostile world…in which the spectator is alive to forces of a complexity we can barely grasp" (p. 40).

MAPPER

De-Differentiation
(Loss of specialization in form
or function = Postmodernity)

DECONSTRUCTIVE
PERSPECTIVIST
"Mapping simulated worlds"

Heuristic
(To reveal reality)

Mimetic
(To imitate reality)

HERMENEUTICAL
CONSTRUCTIVIST
"Creating intersubjective worlds"

CRITICAL
RATIONALIST
"Dialectical polarization
in an unequal world"

TECHNICAL
RATIONALIST
"Mirroring the real world"

Differentiation
(Gain of specialization in form
or function = Modernity)

Issue or Debate	scopic regimes of modernity and postmodernity	
Range of Texts	Adams & Farrell, Bray & Thomas, Burrell & Morgan, Buttimer, Gottlieb, Hilker, Kerr, LaBelle & White, Liebman, Lindsey, Maguire, Marin, Mausolff, etc.	
Range of Positions	heuristic mimetic	differentiation de-differentiation
Knowledge Communities	critical rationalist, deconstructive perspectivist, hermeneutical constructivist, and technical rationalist	

Figure 13. Mapping the Scopic Regimes of Modernity and Postmodernity (1997)

4.2.7 Mapping the Entrepreneurial Education Debates

In one of the first dissertations dedicated to social cartography, Erkkilä (1998) explored the relationship between education and entrepreneurship in the comparative context of Finland, the United Kingdom, and the United States. Instead of a single map, she drew three maps with the same borders to plot the locations of policy discourse within the political context of each country. On the left side of her maps, she placed discourses that focused on individuals, such as entrepreneurship programs that promote youth reliance. On the right side, she placed discourses that focused on society, such as entrepreneurship programs that advocate for national economic development. She positioned the knowledge communities, which are sized according to the frequency with which they were mentioned in policy texts, along the maps' vertical axis according to their overall support for entrepreneurial education (see Figure 14).

What is particularly interesting about Erkkilä's maps is that there is no interaction between competing discourses. Even though there is some overlap among discourses that support entrepreneurial education on the United States map, for example, there is no overlap among discourses that support entrepreneurial education and those that oppose it. Rather than being a failing of Erkkilä's mapping project, this is an example of social cartography making the invisible visible because it suggests the need for new discourses that can bridge this divide.

At least part of the reason for the policy debates is the different terminology being used across the levels of social entities. "This lack of [consistency]," Erkkilä writes, "has caused substantial confusion and has even turned people away from [entrepreneurial education]" (p. 9). Her study, however, which was eventually adapted into a book, demonstrates how more and more people are willing to turn to alternative perspectives to settle their debates (Erkkilä, 2001).

Figure showing three oval diagrams labeled US, UK, and FIN with axes SUPPORT/OPPOSITION (vertical) and INDIVIDUAL/SOCIETY (horizontal).
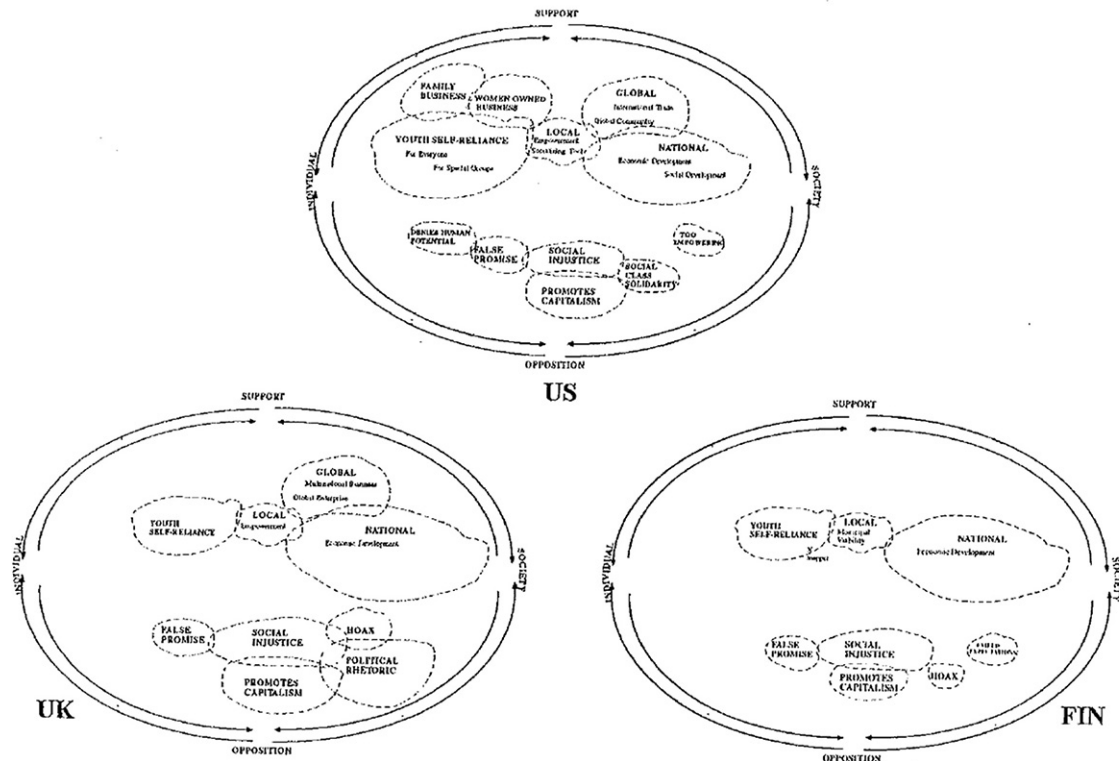
Issue or Debate	the entrepreneurial debates in Finland, the United Kingdom, and the United States	
Range of Texts	formal policy texts, such as official documents, and informal policy texts, such as newspapers and webpages	
Range of Positions	individual society	opposition support
Knowledge Communities	youth self-reliance, local municipal visibility, national economic development, false promises, social injustice, failed expectations, etc.	

Figure 14. Mapping the Entrepreneurial Education Debates (1998)

4.2.8 Mapping New Approaches in Program Evaluation

Gorostiaga and Paulston (1999) took an eclectic approach to mapping program evaluation methods in the context of Latin American education. Rather than trying to determine which of the seven methods they mapped was the *best*—the analogy of the soil scientist, concept mapping, intertextual evaluation, organizational perspectives, participatory self-evaluation, or social cartography—the purpose of their study was to explore the potential success of each for working in select regional educational contexts.

Their map, which appears as an open intertextual field, is arranged with constructivist worldviews on the left, positivist worldviews on the right, expert-based approaches on the bottom, and participatory approaches on the top. Rather than representing the knowledge communities graphically within porous boundaries, they simply used text to situate them in the intertextual mix. Even though this might seem like an aesthetic step backward from some of Paulston's earlier phenomenological-conceptual landscapes, this approach does not take away from the postmodern argument of indeterminacy that Gorostiaga and Paulston are trying to make. If anything, it actually reinforces it by making use of the white space (see Figure 15).

While the stakeholders' perspectives and ontological differences are important issues in Latin American education, "[Gorostiaga and Paulston] acknowledge that others may consider that there are more critical dimensions that should serve for making the field" (p. 25). Because the choice of dimensions can be so controversial, as it determines what claimants are going to be included or excluded from the map, it is important for social cartographers to not only include their viewpoint on their maps, but also to be open to expansions and revisions as people with different perspectives offer their own interpretations of the terrain.

Participatory
(Stakeholders are actively involved)

participatory self-evaluation
(Uphoff; Mausolff)

Guba and Lincoln (1989)

organizational perspectives
(Rogers and Hough)

Mappers'
Perspective

analogy of the
soil scientist
(Klitgaard)

concept mapping
(Trochim)

Constructivist
(includes multiple perspectives)

organizational learning
(Preskill)

Positivist
(Mirrors objective reality)

social cartography
(Paulston)

intertextual evaluation
(Roe)

Rossi and Freeman (1985)

Expert-based
(The expert's voice prevails)

Issue or Debate	new approaches in program evaluation in the Latin American context	
Range of Texts	Guba & Lincoln, Kilgaard, Mausolff, Paulston, Preskill, Roe, Rogers & Hough, Rossi & Freeman, Uphoff	
Range of Positions	constructivist positivist	expert-based participatory
Knowledge Communities	the analogy of the soil scientist, concept mapping, intertextual evaluation, organizational perspectives, social cartography, etc.	

Figure 15. Mapping New Approaches in Program Evaluation (1999)

70

4.2.9   Mapping Knowledge Positions in the Postmodernity Debate

Paulston's (1999) map of knowledge positions constructing the postmodernity debate in comparative education discourse attempts to avoid giving the appearance of dualism or a binary struggle of opposites by demonstrating that all positions are interrelated in such a way that allows for the negotiation of meanings and values. In Figure 16, Paulston constructs a heterotopic space where texts, not the authors of texts, can speak for themselves within the context of his own subjective interpretations. "Readings by others, including the authors themselves, would most likely produce different interpretations and mappings" (p. 439). Space is arranged along the horizontal axis from postmodernist destabilizations, which offer a non-essentialist view of reality, on the left, to modernist certainties, which privilege an essentialist view of reality, on the right. Similarly, space is arranged along the vertical axis from the problematization of actors, where identity is either mutable or essentialist, on the bottom to the problematization of systems, where reality is either simulated or structuralized, on the top. The arrows connecting one knowledge community to the next suggest the flow of ideas, while the porous boundaries of the communities themselves suggest an overlapping exchange of ideas.

What is particularly interesting about this map is that while texts by Paulston appear in two places (Social Cartography/Mapping Multiple Perspectives and Post-Paradigmatic Eclecticism), he also includes a space for his perspective as a mapper. This serves to further his argument that social maps offer readings of texts, which are separated from their authors and become sites for interpretation in an intertextual field. The postmodern condition is characterized by a reflexive awareness of self, space, and multiplicity, and this map demonstrates how it is possible to represent these ideas on paper in two dimensions.

71

Figure 16. Mapping Knowledge Positions in the Postmodernity Debate (1999)
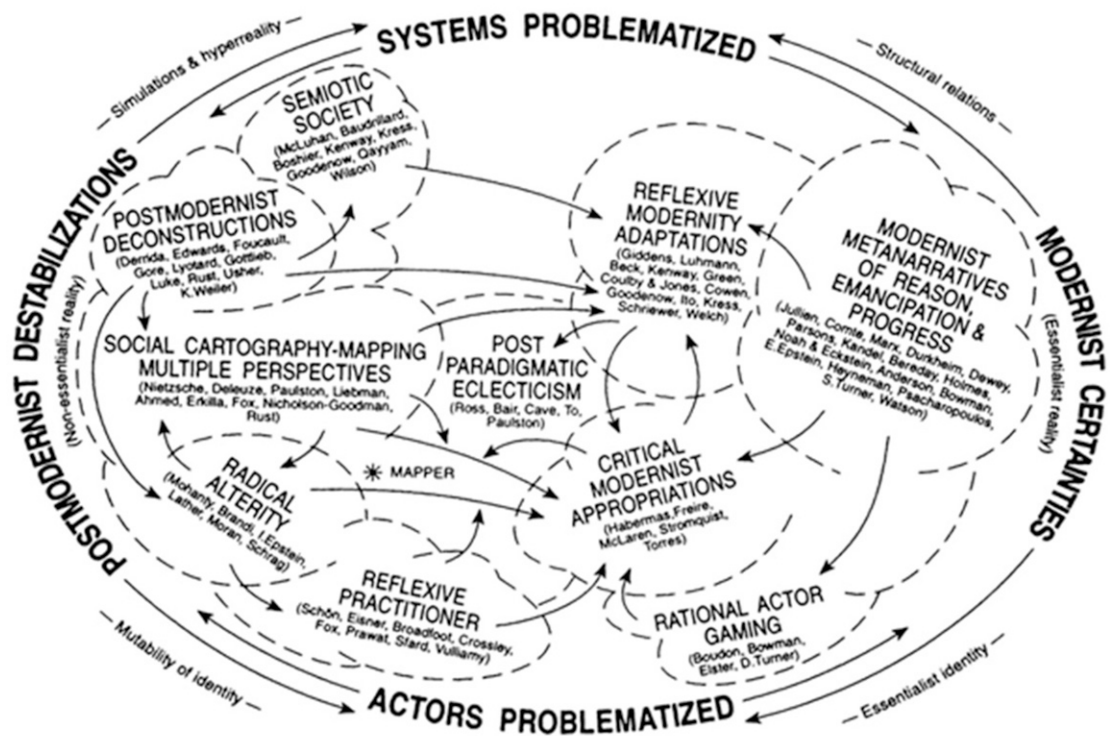
Issue or Debate	knowledge positions constructing the postmodernity debate in comparative education (and related) discourse	
Range of Texts	Ahmed, Anderson, Bair, Baudrillard, Beck, Bereday, Boshier, Boudon, Bowman, Brandi, Broadfoot, Cave, Comte, Coulby & Jones, Cowen, Crossley, Deleuze, etc.	
Range of Positions	postmodernist destabilizations modernist certainties	actors problematized systems problematized
Knowledge Communities	critical modernist appropriations, modernist metanarratives of reason, emancipation, and progress, postmodernist deconstructions, post-paradigmatic eclecticism, etc.	

4.2.10 Mapping Representational Forms of Imagination

In one of his last publications, Paulston (2000) explored the use of imagination in comparative education discourse after Foucault's formulation of how the imbricated epistemes of European scientific discourse have changed over time. In Figure 17, space is arranged along the horizontal axis from interpretivist ways of seeing on the left to essentialist ways of seeing on the right. Similarly, space is arranged along the vertical axis from verbal forms on the bottom to visual forms on the top. Once again, the knowledge communities are portrayed as nebulous clouds with porous boundaries; however, this time they are arranged around the Chora, a space of emergent forms and potentiality, at the center of the map. According to Caputo (1997), the Chora, which Plato described as a space through which everything passes but in which nothing is retained, "has no meaning or essence, no identity to fall back upon" (pp. 35-36). It is, for Paulston, a place where all representational forms are available as practical choices.

From this perspective, social cartography, as the metaphorical mapping of diverse ways of seeing heterotopias of intellectual space, is viewed as an offshoot of the spatial imagination. According to Paulston (2000), "the belief that epistemological research genres, such as the scientific text, have 'real' objects and events, which provide a warrant for the knowledge-value of such 'scientific' texts, is today highly problematic. What is increasingly recognized is that claims to absolute knowledge cannot be proven and that attempts to achieve hard data and objectivity all too often result in dilemmas of exclusion, circularity and infinite regress" (p. 363). In other words, Paulston is suggesting that while social cartography is useful for opening comparative education discourse to new ways of seeing, there will always be the need for new systems as the world continues to change and develop.

Figure 17 diagram labels (visual forms):

- Visual Forms
- Portrayals of the Different/Same
- True Schematic Reproductions
- MAPPER
- SPATIAL PATTERNING: METAPHORIAL MAPPINGS
- PICTORAL DISPLAY: SIMULATIONS
- STATISTICAL ACCOUNTS: GRAPHICS & COMPILATIONS
- MIMETIC MIRRORING: SCIENTIFIC MODELS
- Interpretivst Mode
- Essentialist Mode
- CHORA — The space of emergent forms of potentiality
- RHETORICAL: TEXTUAL DECONSTRUCTIONS
- "THICK" DESCRIPTIONS: ETHNOGRAPHIES
- NOMOTHETIC ANALYSES: EXPLANATIONS & THEORIES
- NARRATIVES: STORIES & HISTORIES
- Contextualized Realities
- True Word-Object Relations
- Verbal Forms

Issue or Debate	representational genres / forms of imagination and products of representational practice constructing comparative and international education discourse	
Range of Texts	Ahmed, Archer, Basset, Beck et al., Berchtold, Bernstein, Blake, Bowles & Gintis, Bowman, Brickman, Carnoy, Comenius, Condorcet, Correa, Davis, etc.	
Range of Positions	interpretivist mode essentialist mode	verbal forms visual forms
Knowledge Communities	mimetic mirroring: scientific models, narratives: stories & histories, nomothetic analyses: explanations & theories, pictorial display: simulations, etc.	

Figure 17. Mapping Representational Genres and Forms of Imagination (2000)

74

4.2.11 Mapping Rural Women's Perspectives on Nonformal Education

After conducting a series of interviews, Ahmed (2003) mapped the perspectives of 20 women from a rural Bangladeshi village on nonformal educational experiences. The purpose of her study was to examine the women's awareness of oppression and exploitation, and her map served as a conventional symbol of truth claims, giving her subjects a *voice* where there had previously only been silence. In Figure 18, space is arranged along the horizontal axis from a focus on actors on the left to a focus on systems on the right. Similarly, space is arranged along the vertical axis from equilibrium orientations on the bottom to transformation orientations on the top. Even though Ahmed's map makes liberal use of Paulston's (1994) coordinates and knowledge communities, her conceptualization of space differs from his insofar as she is plotting perspectives rather than theories within the intertextual field.

In order to situate each perspective, Ahmed first identified the role each woman played in her community—leader, organizer, happy wife, etc.—and examined her worldview within the context of an overarching feminist framework. Rather than give each text its own space on the map, Ahmed chose to cluster the texts in groups. While this provides readers with an opportunity to visualize how the women align with each other, it does not give an indication as to how the women differ within knowledge communities. For example, the map suggests that Maya and Suriya both possess radical functionalist mindsets, but it does not show how they might possess different worldviews within this perspective. Another disadvantage of this conceptualization is that Ahmed's appropriation of Paulston's coordinates, which he initially used to demonstrate the relationships among theories in comparative education texts, does not translate as well to the visualization of human perceptions.

Figure 18. Mapping Rural Women's Perspectives on Nonformal Education (2003)

Issue or Debate	rural women's perspectives on nonformal educational experiences	
Range of Texts	Amina, Beuty, Dina, Fatema, Firoza, Jakia, Jasmin, Masuda, Maya, Minara, Monica, Mukul, Munira, Rahela, Reshma, Roqshana, Sakina, Seuli, Shirin, and Suriya	
Range of Positions	focus on actors focus on systems	equilibrium orientations transformation orientations
Knowledge Communities	functionalist, humanist, radical functionalist, and radical humanist	

4.2.12 Mapping Diverse Perspectives on School Decentralization

The purpose of Gorostiaga and Paulston's (2004) map of diverse perspectives on school

decentralization is to examine the arguments and counterarguments about the possible benefits

and pitfalls of different policies and proposals. In addition to demonstrating how conflicting

perspectives can be provisionally situated in an intertextual field, their study also shows how

these perspectives can be seen to interact with each other instead of simply sitting in opposition.

In Figure 19, space is arranged along the horizontal axis from a conflict worldview of social and

educational change on the left to an equilibrium worldview on the right. Similarly, space is

arranged along the vertical axis from views that oppose decentralization on the bottom to those

that favor it on the top. Within the map, texts are categorized according to major perspectives in

the global debate. Solid lines between the perspectives represent borrowing relationships, while

dashed lines represent critical ones.

Gorostiaga and Paulston used quotes from the texts to justify their positions in the

intertextual mix. "To the extent possible, texts were allowed to speak for themselves…The use of

quotes helps to show that the researchers' interpretation of the text is not arbitrary, and also to

show the construction of argument in the texts' own words. In order to discuss various kinds of

relationships among texts and perspectives, particular attention was given to what Fairclough

(1992) calls the 'manifest intertextuality' of each text, particularly in the form of quotes or

statements that refer to other texts on the issue of school decentralization" (p. 280). Because

social mapping is such a subjective practice, it is important for cartographers to be able to justify

their decisions as objectively as possibly. While this may seem like a contradiction, there has to

be some sort of basis for comparison outside of the mapper's unique worldview.

Figure showing a circular diagram titled with the following labels:

Favors Decentralization

Educational Markets
Chubb & Moe (1990)
Finn et al. (2000)
Tooley (1996)

Local Empowerment
Hess (1995)
Cookson (1997)
Bryk et al. (1997)

Nathan (1996)

Efficient Systems
Caldwell & Spinks (1988, 1992)
Morhman et al. (1994)

World Bank (1995)

Rehnters (1997)

ECLAC/UNESCO (1992)

Strike (1993)

Meppes

Pragmatic Balances
Hanson (1997)
Ramirez et al. (1991)
Fiske (1996)
Tedesco (1994)

Democratic Participation
Gadotti (1996)
Smyth (1996)
Fine (1993)

Chapman & Aspin (1997)

Angus (1993)

Elmore (1993)

Radical Critique
Whitty et al. (1998)
Hartley (1994)
Wells (2000)

Effectiveness Critique
Malen et al. (1990)
Leithwood & Menzies (1998)

Conflict Worldview

Equilibrium Worldview

Opposes Decentralization

Issue or Debate	diverse perspectives on school decentralization	
Range of Texts	Angus, Bryk, Kerbow & Rollow, Caldwell & Spinks, Chapman & Aspin, Chubb & Moe, Cookson, ECLAC/UNESCO, Elmore, Fine, Finn, etc.	
Range of Positions	conflict worldview equilibrium worldview	opposes decentralization favors decentralization
Knowledge Communities	democratic participation, educational markets, effectiveness critique, efficient systems, local empowerment, pragmatic balances, and radical critique	

Figure 19. Mapping Diverse Perspectives on School Decentralization (2004)

5.0   MISREADING SOCIAL MAPS: THE ANXIETY OF ANCESTRY

The rise of postmodernism in comparative education discourse was met with enthusiasm by those scholars who wished to explore the boundaries of their field (Rust, 1991). According to Paulston (2000), who encouraged his colleagues to embrace emerging theories and become social cartographers, those "who [learned] to negotiate…the new spaces of knowledge…[would] have unprecedented opportunities to imagine and help to shape an interactive postmodern comparative and international education beyond [their current understanding]" (p. 363). Similarly, Nicholson-Goodman (1996), who worked with Paulston to open dialogue and construct a more inclusive discourse, framed the postmodern as "a landscape which features arguments over historicity, aesthetic style and the nature of knowledge…[and] highlights differences in ways of seeing knowledge as each new way of knowing sheds light on alternatives, expanding the possibilities" (pp. 320-321).

Ten years after the introduction of the *post* to comparative studies, Arnove (2001) catalogued "the shifts the field [had] undergone across modernization theory and structural functionalism…to Neo-Marxist, world systems, and dependency theories" (p. 21). While many comparativists viewed the increasing diversification of their field as a strength, others, most vocally Epstein and Carroll (2005), argued that postmodernism was "the most serious challenge ever to boundary stability," capable of diluting and distorting the field with subjective, decentered views of reality (p. 65).

5.0.1 Abusing Ancestors

Epstein and Carroll's (2005) attack on postmodernism, which included a particularly harsh critique of social cartography, decried "the nihilistic influences of continental philosophy" in comparative education discourse (p. 88). They were concerned that the growing interest in postmodernism would displace the historical functionalist ancestors of their field, and, in doing so, set up new totalizing narratives in their place. At their most direct, Epstein and Carroll went so far as to accuse Paulston and his colleagues of claiming a moral and epistemological high ground while"[constructing] a Procrustean bed on which to distort the ideas of traditionalists and trim their influence" (p. 78).

As evidence for their argument that postmodernists were guilty of replacing modernist histories with postmodern ones, they cited Paulston's (1999) map of knowledge positions constructing the postmodernity debate in which modern perspectives were mapped as certainties on the right side of the map while postmodernist perspectives were mapped as destabilizations on the left. "Although Paulston's map has promise for identifying in a general way some theoretical relationships among comparativists," they argued that "it rigidly reifies and distorts the intellectual platforms of the individuals it categorizes" (p. 81). From Foucault's radical discontinuities to Lyotard's mininarratives, from Baudrillard's simulacra and hyperreality to Nietzsche's perspectivism, Epstein and Carroll chipped away at the philosophical underpinnings of postmodernism by linking them to the Heideggerian thought they so abhorred. Although their true prejudices against postmodernism would not appear until later in the debate, they initially blamed Heidegger's dispute with Ernst Cassirer at the Davos disputation in 1929 for causing the initial rift between empiricist and intuitivist epistemologies.
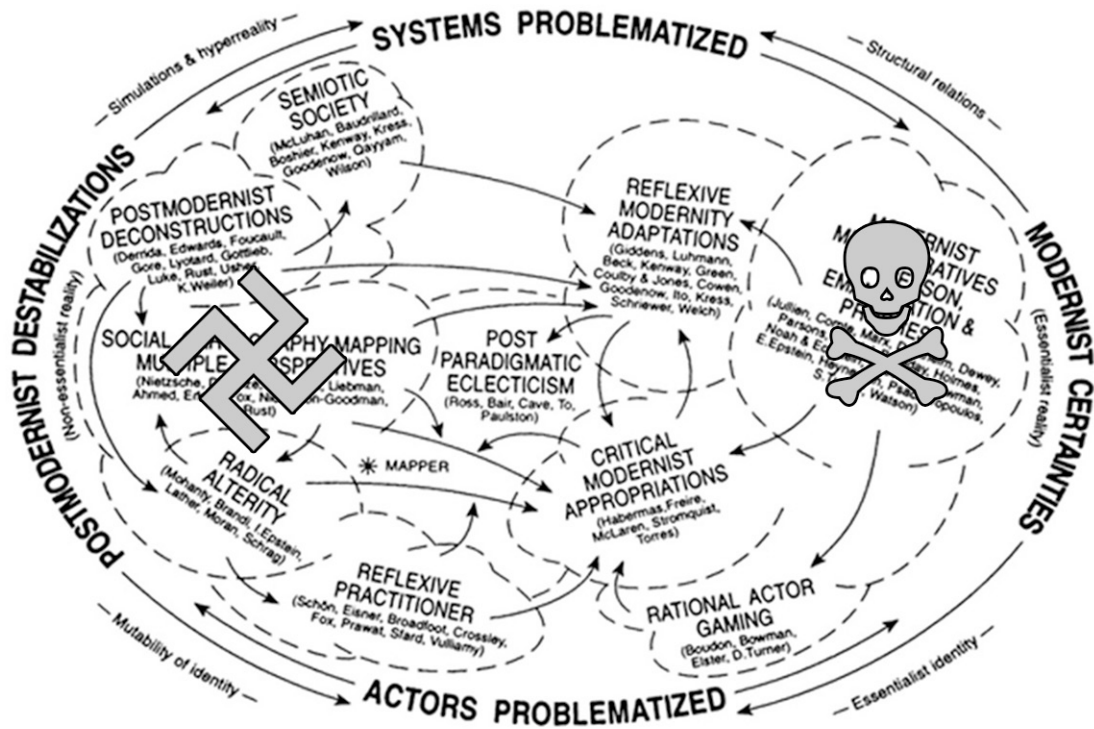
Figure 20. Epstein and Carroll's misreading of Paulston's map (Paulston, 1999). Icons added.

The Davos disputation, so-called for its occurrence in Davos, Switzerland at a symposium sponsored by the Swiss, French, and German governments, was supposed to heal the divide between French and German intellectuals. Instead of providing a reconciliation, an argument between Cassirer and Heidegger "led to the rupture between analytic and continental philosophical traditions, with the former represented most notably by Cassirer…and the later by Heidegger" (Epstein & Carroll, 2005, p. 73). Epstein and Carroll concluded their initial argument against postmodernism by citing Searle (1995), who suggested that antirealists were "blind," "indifferent," and "ridiculous" (p. 158), and Oakley (2000), who claimed that postmodernists "[drive] the enforced injustices of social inequality into the personal cupboard of privately experienced suffering" instead of working to dispel them (p. 306).

5.0.2 Acknowledging Ancestors

In order to make sense of Epstein and Carroll's assault on postmodernism, in which "a combination of fear and scorn…permeate what [they] understand of [the postmodernist surge,]" Lather and Clemens (2010) compared their conflation of phenomenology and postmodernism to Ninnes and Mehta's (2004) exploration of the application of postfoundational ideas to comparative and international education discourse (p. 186). "Perhaps most interestingly," they argued that "the sort of angst around the post so evident in Epstein and Carroll seems a sort of displacement itself in 'beating up the messenger' [Paulston] who might, if attended to, actually aid in 'the fundamental excavation of the theoretical categories' that might re-position comparative studies of education in terms of continued relevancy" (p.187).

Whereas Epstein and Carroll (2005) suggested that issues of economic and social injustice are discarded by postmodern theories, Ninnes and Mehta (2004) argued that these same theories could actually be used to create *safe spaces*, such as Paulston's maps, for perspectives that were previously marginalized under historical functionalism. Without totally embracing Ninnes and Mehta's cautious embrace of postmodern multiplicity or tossing out Epstein and Carroll's claims of hostile takeovers or complete philosophical negation, Lather and Clemens suggested that while "entertaining the post is, indeed, 'dangerous' to the very foundations of the field," it is still capable of "[re-energizing] basic categories of analysis instead of killing them" (p. 187). Whereas Epstein and Carroll dismissed postmodernism, Lather and Clemens, alongside Ninnes and Mehta, were at least willing to acknowledge that postmodern ideas, including social cartography, were capable of augmenting the field in interesting and potentially beneficial ways, essentially channeling the benefit of multiplicity instead of suppressing it.

5.0.3   Honoring Ancestors

Larsen (2009) also refuted Epstein and Carroll's claim that "postmodern comparativists are guilty of perpetuating a hegemonic and totalizing discourse" (p. 1046). Rather than "abusing ancestors," as a historian, she claimed that post-foundationalist ideas, including postmodernism, post-colonialism, and post-structuralism, had the capacity to honor the founders of comparative education discourse by engaging their work through a new critical and reflective lens. In particular, Larsen looked to Foucault for a provocative approach to historical studies that not only bridged the divide between practice and theory but also offered a framework for new ways of understanding the past in the context of the present.

She argued that "Foucault's historical and methodological work provides a cutting edge and crucial means by which we can engage in historical research. For example, by adopting the strategies of archeological research, we can better understand the discursive effects of classroom, school and community practices on students, their parents and teachers" (p. 1056). Instead of threating the boundaries of comparative studies, which she suggested have never been stable, Larsen contended that postmodernism can help shore them up. "Proposing that we engage with postmodern ideas and concepts is no more an abuse to our ancestors than is the suggestion that we engage with ethnographic research or any other research methods that were foreign to early comparativists" (p. 1057). Whereas Epstein and Carroll were threatened by the inclusion of postmodern ideas, Larsen saw an opportunity to support the foundations of the field rather than supplanting them. To be fair, there was something more than the introduction of an inclusive discourse that troubled Epstein and Carroll and provoked their response. It was not until later, in a festschrift for Paulston, that they finally owned up to their problems.

5.0.4 Erasing Ancestry

The root of Epstein and Carroll's (2011) frustration with postmodernism lies in its association with German Idealism. Even though they hinted at this in their initial article, it was not until they had the opportunity to respond to Lather, Clemens, and Larsen's critiques that they were able to assert ideas that had been excised from their original manuscript. Ultimately, their argument was that "the issue of the Heideggerian foundation of postmodernism must rest on the extent to which Heidegger's legacy was infused with Nazi ideology. [Their] contention with Paulston [was] based on [their] conviction that incorporating Heideggerian and postmodern precepts necessarily compromises the field" (Epstein & Carroll, 2011, p. 44).

In response to Lather and Clemens' (2010) use of Derrida's deconstruction process to critique their work, Epstein and Carroll argued that "Lather and Clemens advance a 'pop' formulation that restricts research goals to 'discovering' assumed *aporias* and 'openings,' concentrating on what is 'unsaid' and mandating that these conjectured elements are the only ones of value" (p. 35). Similarly, they responded to Larsen's (2009) critique by renewing their assault on Heideggerian thought, dismissing her use of Foucault as well as her "[use of] language as a vehicle to reformulate the purpose of language and redirect thought" (p. 38).

While Epstein and Carroll ultimately acknowledge Paulston's contributions to the field, they become more and more defensive of their position throughout the chapter and finally entrench themselves in a total dismissal (or even acknowledgement) of postmodern thought, arguing that the purpose of postmodernism "is to abandon reason-based, Cartesian approaches to reality and replace them with the dizzying and cynical experience of the postmodern carnival mirror-world, thus erasing the 'real' things that words stand for" (p. 43).

5.0.5 Mapping Ancestry

Postmodernism is difficult to define. While Epstein and Carroll might be forgiven for their dismissal of Heidegger, if only for his connection to Nazi ideology, their misreading of social cartography and subsequent condemnation of Paulston and his colleagues, as if they or anyone else associated with postmodern thought were somehow responsible for the atrocities committed during the Holocaust, is more difficult to overlook.

The purpose of social cartography is not, as Epstein and Carroll suggest, to construct hierarchies or regulate certain perspectives to a *graveyard of ideas*. In Paulston's (1999) map, for example, the positioning of theories in a heterotopic space in no way privileges one worldview over another. Theories mapped closer to one side of the map are seen in distant relation, not in competition, to each other. There is no such thing as a hierarchy in social cartography; there is, however, an acknowledgement of multiple perspectives in a predefined space, the borders of which are meant to be challenged as future iterations of the map are produced. It is also important to note that Paulston was mapping *texts*, not *people*, as Epstein and Carroll erroneously suggest (see Figure 20).

By situating modernist perspectives and postmodernist perspectives at opposite poles of the map, Paulston was demonstrating the differences in their underlying philosophies, which is something that Epstein and Carroll not only accept but also advance as a part of their own argument. The purpose of social cartography, then, is not to discard, usurp, or *abuse*—in fact, this argument could only be made if Paulston had excluded the historical functionalists from his map in the first place—rather, its purpose is to ensure that as many perspectives are considered as possible as the field of comparative education continues to develop.

Table 5. Summary of the arguments constructing the social cartography debate

Text	Argument
Epstein & Carroll (2005)	Postmodernism is a threat to the boundaries of comparative and international education discourse. Instead of being open and inclusive, postmodernists would see the historical functionalist ancestors of the field removed in favor of their own.
Larsen (2009)	Rather than abusing the historical functionalist ancestors of comparative and international education discourse, postmodernism has the capacity to honor them by engaging their work through a new critical and reflective lens.
Lather & Clemens (2010)	Considering the interest in exploring postmodernist theories, not only in comparative and international education discourse but also in the larger cultural surround, postmodernism can help keep the discourse relevant.
Epstein & Carroll (2011)	The postmodern reliance on German Idealism, especially in its association with Heidegger and Nazi ideology, compromises the field by abandoning reason-based Cartesian approaches to reality in favor of more cynical, subjective approaches.

The purpose of postmodernism is not simply to overturn metanarratives; rather, it is to reimagine those metanarratives as mininarratives that can be compared to each other without privileging one over another. While Paulston was unable to respond to Epstein and Carroll's critique, his colleagues defended his legacy without stooping to the kind of rancor that Epstein and Carroll unleashed. Instead of refusing to acknowledge the contributions of postmodernism to comparative education discourse, either because of a sharp dismissal of Heideggerian thought or because of the commonly limited ability to read maps, critics of postmodernism might come to understand their own positions by seeing postmodernism not as an exclusionary discourse, but rather as one willing to admit its own faults, or at least consider them, in different contexts. One of the ways that people might begin to do this, to consider their own underlying beliefs in the context of their colleagues, is by turning to Paulston's maps. Once they have familiarized themselves with one person's conceptualization of the field, they could take the next step by trying to make a map of their own, extending their own and others' understanding.

6.0 TOWARD A POST-REPRESENTATIONAL SOCIAL CARTOGRAPHY

In order to move away from the idea that maps represent truth, even further than the idea that maps are ideologically-laden cultural texts, post-representational cartographers argue that maps should be conceived of as inscriptions instead of representations. Pickles' (2004) work, for example, focuses on "the work that maps do, how they act to shape our understandings of the world, and how they code that world" (p. 12). From this perspective, maps are understood as complex, multivocal, and contested, rather than as mirrors of nature.

For Kitchin and Dodge (2007), maps are inscriptions in a constant state of re-inscription. "Without these practices a spatial representation is simply colored ink on a page…Practices based on learned knowledge and skills (re)make the ink into a map and this occurs *every time* they are engaged with—the set of points, lines and areas is recognized as a map: it is interpreted, translated and made to do work in the world" (p. 335). Post-representational cartography supports a hermeneutic approach to mapping that frames maps as complex texts that cannot be authored or read in simple ways. Rather than attempting to uncover power relations, this approach understands the power of maps as diffuse, reliant on actors as well as authors, to describe or realize their potential effects. Because they are *of-the-moment*, maps are constantly being remade as spatial practices to explore relational situations, be they geographical or educational. In any case, the important question for post-representational cartographers is not *what a map is*, but *how a map emerges*.

6.0.1 A Brief History of Post-representational Cartography

At the end of the twentieth century, cartographers began to problematize the dominant theory of cartography that viewed maps in terms of what they represent rather than in terms of what they do. While exploring the production of Western scientific knowledge over time, for example, Latour (1987) suggests that maps are immutable mobiles. They are immutable in the sense that a rigid hierarchy exists among mapping practices—professional cartography, for example, is usually held in a higher esteem than indigenous cartography—and mobile in the sense that they are stable devices for transferring spatial knowledge from one time and place to another. This argument is consistent with the post-representational idea that instead of representing space *at a particular moment*, maps produce new space-times that are *of a particular moment*.

Following Baudrillard's famous statement that a territory does not precede a map, Corner (1999) argues that space becomes territory only when some cartographer decides to draw a border around it. From this perspective, maps and territories are co-constructed, and space is constituted through mapping practices, re-creating rather than reflecting the world around us. For Corner, maps remake "territory over and over again, each time with new and diverse consequences," and the focus should be on what maps do rather than on how they look (p. 213).

Latour (1999) also offers an argument that shifts the emphasis from what a map represents to the context in which it was produced. From this perspective, which builds on Harley's (1989) social constructivist approach, "maps do not have meaning or action on their own; they are part of assemblage of page, discursive processes and material things. They are [actants] deployed in an actor-network of practices rather than existing as de-corporalized, a priori, non-ideological knowledge objects" (Kitchen, Perkins, & Dodge, 2011, p. 16).

Ingold (2000) takes an approach to mapping grounded in cultural practices, vis-à-vis the way-finding rituals among people in a particular region. Instead of detailing locations, this approach superimposes the histories that constitute a space. While this kind of mapping practice might seem more grounded in anthropology than geographical cartography, it nevertheless espouses a post-representational perspective because it focuses on maps as views of space bounded within the practices and knowledge of their makers.

Along this line, Crampton (2003) explores Heidegger's use of ontic knowledge, which concerns real as opposed to phenomenological knowledge, and ontological knowledge, which concerns the conditions for ontic knowing, to question the nature of cartography itself. For Crampton, "a historical ontology…suggests that the way things are, their being, is in fact a historical product operating within a certain *horizon of possibilities*" (p. 6). As historical products, the difference between the maps of today and the maps of the past is that the maps of today are conscious of how they are framed conceptually in order to make sense of the world.

Working in the vein of cartographic hermeneutics, which positions maps as tools of intervention between society and territory, Casti (2005) argues that maps are capable of communicating self-referential information to effectively describe the result of human interaction in a particular territory. Instead of simply conveying power relations, for example, she suggests that maps bring their own set of rules to the conversation that can affect the ways that map readers perceive the places the maps portray. In addition to "the ability of a map…to play a role in communication that is independent of the intentions of the cartographer who produced it," Casti also suggests that a map, as the locus on semiosis, is an icon, "an instrument by means of which one carries out a metamorphosis of the world" (p. 1-10). This means that rather than representing territory, the map actually replaces it.

According to Del Casino and Hanna (2005), who channel the work of Deleuze and Guattari (1987), "maps are both representations and practices…simultaneously. Neither is fully inscribed with meaning as representations nor fully acted out as practices" (p. 36). Because maps are mobile subjects, meaning that they are socially-constituted, contested, and intertextual, it is impossible to separate the work that maps do in the world from how the world shapes how maps are performed. Maps, in other words, are in a constant state of becoming, changing with each encounter and producing new meaning.

Similarly, Wood and Fels (2008) contend that maps produce rather than represent the world around us. By making propositions, statements in which the subjects are either affirmed or denied by the predicates, in graphic form, maps are essentially affirming the existence and locations of their subjects. By illustrating a house of worship, for example, the map is proposing that it is actually there, that someone could travel to the space the map produces and find the house of worship as it was when the map was initially created.

According to Wood and Fels, all maps convey their authority through an inherent feature called a paramap, which can be subsequently broken down into the perimap and the epimap. The perimap (internal power, technical production) involves the actual production surrounding the map, such as the inclusion of legends and scales, while the epimap (external power, cultural production) involves the discourse from which the map draws its meaning. For Wood and Fels, "the question is *not*…how things are arranged for the eye, but how the design promotes and constrains, how it directs, the construction of meaning" (p. 194). In other words, they suggest that mapping should be framed as a cognitive cartographics, a cognitive-linguistic approach that lends a non-representational perspective to mapping that focuses more on the construction of meaning than on graphic design.

Rather than actants or immutable mobiles, icons or historical products, Della Dora (2009) calls for "a re-conceptualization of maps as fluid objects that are always in the making" (p. 240). Her approach, which focuses on the interactions and co-authorships between cartographers and map users, conceptualizes cartographic representations, including maps and atlases, as mnemonic devices that are at once visual and tactile. Instead of looking at maps as finite representations, she contends that every cartographic interaction is a performance, a fleeting encounter in a particular space at a particular time.

According to Kitchin, Gleeson, and Dodge (2012), maps are processes "that ceaselessly unfold through contingent, citational, habitual, negotiated, reflexive and playful practices, embedded within relational contexts" (p. 480). They contend that the representational turn in cartographic theory is important not only because it highlights how maps are remade in diverse ways—socially, politically, aesthetically, etc. —but also because it demonstrates how mapping practices can benefit from a variety of different approaches, including participant observation, observant participation, and deconstruction. By reexamining the ontological basis of cartography, they suggest that scholars have a chance to better understand the ways in which maps and map users co-constitutively produce space.

Working against the "illusory and spurious mimetic association between the map and the world that has framed our imagination since the scientific revolution," Caquard (2015) argues that a post-representational cartography is capable of navigating the line between a map and its contexts of use and production. In fact, he goes so far as to suggest that "post-representational cartography provides an original framework for integrating [diverse] perspectives, and has the potential to bring cartography into a new arena that transcends the empiricist/critical divide" (p. 231-232).

Table 6. Map conceptions by historical periods and authors (Azócar Fernández & Buchroithner, 2014)

Modern	Author	Map Conception
	Tobler (1976)	Objective representations
	Robinson (1987)	Truths
Postmodern	**Author**	**Map Conception**
	Latour (1987)	Immutable mobiles
	Harley (1989)	Social constructions
	Latour (1999)	Actants
	Crampton (2003)	Historical products
	Casti (2005)	Locus of semiosis
	Wood & Fels (2008)	Propositions
	Della Dora (2009)	Mnemonics
Post-representational	**Author**	**Map Conception**
	Corner (1999)	Re-creations
	Ingold (2000)	Practices
	Pickles (2004)	Inscriptions
	Del Casino & Hanna (2006)	Mobile subjects
	Kitchin & Dodge (2007)	Practices
	Kitchin, Gleeson, & Dodge (2012)	Processes
	Caquard (2015)	Practices

6.0.2   Post-representational Appropriations for Social Cartography

In much the same way that Paulston and Liebman (1993, p. 40) "selectively [appropriated] rationales and examples from [cartographic discourse] and [reinscribed] them in [their] critical postmodern mapping project," I have chosen the map conceptions of Pickles (2004) and Kitchin and Dodge (2007) to frame our understanding of a post-representational social cartography. As Azócar and Buchroithner (2014) suggest, the post-representational paradigm can still be considered postmodern, so I will also be drawing on the work of Harley (1989) and Wood and Fels (2008) to situate post-representational maps in educational discourse.

6.1   DISPOSITIONS FOR POST-REPRESENTATIONAL MAPPING

Social mapping is not for everyone. Without the proper mindset—that is, without subscribing to its underlying philosophies—the purpose of what a post-representational social cartography is trying to accomplish might get lost in translation. In extreme cases, such as Epstein and Carroll's (2011) misreading of Paulston's map, researchers actually run the risk of alienating themselves and others.

Accordingly, the purpose of this section is to describe the dispositions that post-representational cartographers use to draw their maps. It is important to note that these dispositions apply only to cartographers, not to map users. It is possible for anyone to read a social map and draw their own conclusions from it—in fact, it is the interpretation of these interpretations that social cartographers look for in their research—but without an understanding of post-representational social cartography's philosophical underpinnings, it is difficult, if not impossible, to assess the mapping process.

For our purposes here, post-representational mapmakers are situated at the intersection of the interpretivist and the deconstructivist paradigms (see Figure 21). They are interpretivists insofar as they believe that "the world is constructed by each knower/observer according to a set of subjective principles peculiar to that person" (Sipe & Constable, 1996, p. 158). They are deconstructivists insofar as they are "less interested in truth than in questioning every possible basis on which we could discover or construct it" (p. 159). By writing and reading social maps, which are framed as inscriptions (Pickles, 2004) and practices (Kitchin & Dodge, 2007), rather than as scientific representations of truth, post-representational social cartographers attempt to understand situations from the perspective of those actually experiencing the situations.
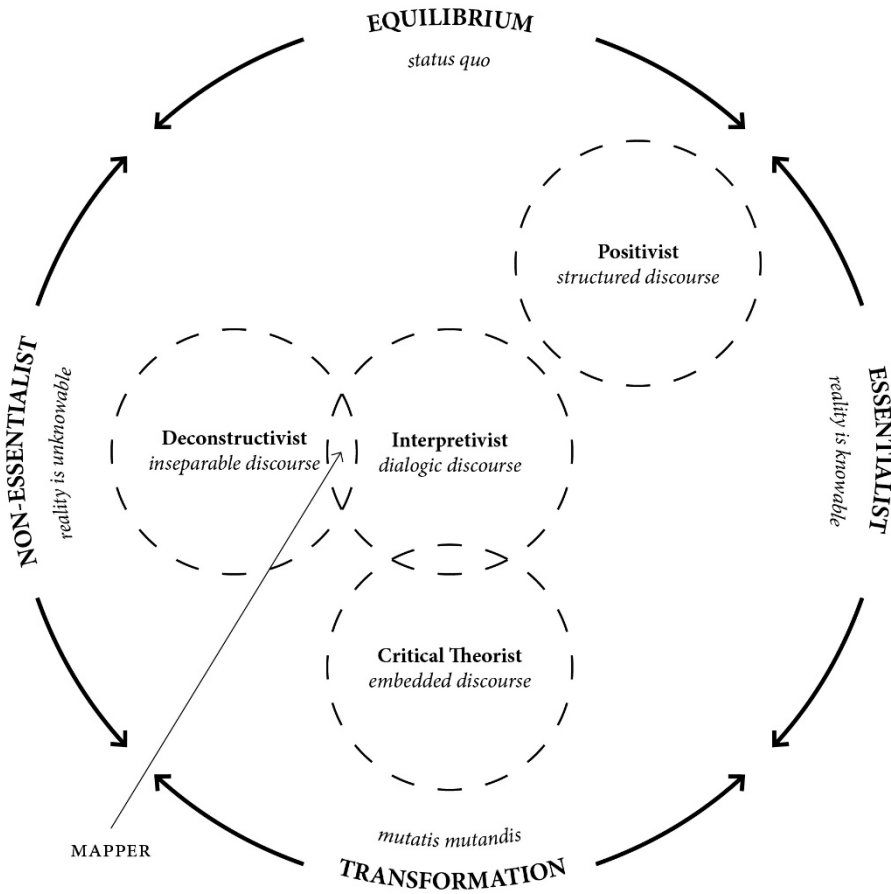
Figure 21. Mapping the Underpinnings of Post-representational Cartography (2014)

6.1.1 The Underpinnings of Post-representational Cartography

In Figure 21, post-representational social cartographers are situated at the intersection of the interpretivist and the deconstructivist paradigms. As such, they lean toward a non-essentialist perspective that acknowledges the existence of multiple socially constructed realities. They are also situated between the equilibrium and transformation worldviews, which suggests an ethical obligation to keep their subjects informed without pushing them in any one direction.

6.1.2   The Ontological Perspective

Post-representational social cartographers believe in the existence of multiple, possibly conflicting, realities that can be explored through human interactions. They advance a relativist ontology in which realities "are apprehendable in the form of multiple, intangible mental constructions, socially and experientially based, local and specific in nature…and dependent for their form and content on the individual persons or groups holding the constructions" (Guba & Lincoln, 1994, pp. 110-111).

Because post-representational social cartography is so heavily influenced by hermeneutics and phenomenology, social cartographers encourage multiple interpretations of their maps. While they might find themselves arguing about one of their constructions from a particular perspective—feminist, post-colonial, etc.—they are open and in fact encouraging of multiple readings. Because they view maps as being in a constant state of becoming, there is always the tendency to re-map as new encounters and perspectives are taken into account.

Even though social cartographers attempt to understand situations from the point of view of those experiencing them, engaged in a transactive process of give-and-take with their subjects, there is also the tendency to take this sense of relativism to its limit, vis-à-vis the deconstructivist "[assertion] that formulations of truth are always embedded in language, which can be shown to be self-contradictory at certain points" (Sipe & Constable, 1996, p. 159). While the distinction between the known and the knower does not quite collapse—there is still, for example, a reciprocal relationship between the researcher and the researched—the worldviews of both parties are scrutinized in respect to the semiotic systems of meaning, usually language, through which an understanding is reached.

6.1.3   The Epistemological Perspective

Post-representational social cartographers believe that knowledge is socially constructed and that our experiences can be understood through processes of interpretation that are influenced by social contexts. This is a subjectivist, albeit transactional worldview, that asserts that "knowledge is symbolically constructed and not objective; that understandings of the world are based on conventions; that truth is, in fact, what we agree it is" (Hatch, 1989, p. 161). From this perspective, researchers and their subjects are joined in an interactive process in which meaning is constructed throughout the investigation through a dialogic discourse.

Rather than being governed by hypotheses or stated theories, social cartographers extrapolate meaning on a case by case basis. Following Crotty's (1998) suggestion that we should approach texts—read, *maps*—from empathetic, interactive, and transactional perspectives, social cartographers identify, converse, and expand upon what their subjects communicate during the mapping process. This creates an interactive link between the researcher and the researched in which values are made explicit and meaning is co-constructed rather than discovered in a particular social context.

Even though post-representational social cartographers are attempting to understand and interpret the world from their subjects' perspectives, they do not shy away from critiquing the world as well. While they are open to others re-mapping their work, albeit with the same level of rigor that went into the original construction, it is important to remember that the decisions they make about what to include or exclude from their maps, including the way they decide to draw their map's borders, cannot be separated from their own worldview, thus the occupation of some spaces on their maps might be read as being *more desirable* than others.

6.1.4   The Axiological Perspective

Post-representational social cartographers believe in a balanced representation of views that seeks to raise research participants' awareness and develop community rapport. Even though some spaces on their maps may seem *more desirable* than others, their purpose is not to shame their participants by their placement; rather, their purpose is to inform their subjects of where they are in relation to other perspectives that they might not have been previously aware. Once a social map has been constructed, of course, the participants must be given an opportunity to engage in direct conversation with the cartographer, in order to discuss and possibly disagree with where their particular perceptions have been mapped.

For Guba and Lincoln (1989), an interpretive, albeit constructivist, framework for ethical practice focuses on trustworthiness and authenticity, as well as on reflexivity, rapport, and reciprocity. According to Mertens (2009), "[interpretivists] also borrow notions of ethics from feminists in the form of combining theories of caring and justice as holding potential to address issues of social justice in ways that are both respectful of the human relations between researchers and participants, as well as to enhance the furtherance of social justice from the research" (p. 18).

For social cartographers, this means that there is an obligation to address ethical issues by using their maps to offer balanced views of important social issues. While not every social map will be so explicitly political, when such viewpoints are presented they must be given an equal and equitable representation. If a social cartographer's subjects indicate that they are unhappy with their placement on the map, it is important for the mapmaker to engage them in critical conversation, and be willing to create another map based on that conversation.

6.2   THE ELEMENTS OF THEMATIC CARTOGRAPHY

In her *Introduction to Thematic Cartography*, Tyner (1992) outlines six goals for map design—clarity, order, balance, contrast, unity, and harmony—and suggests that cartographers should ask themselves the following questions before starting to draw their maps:

1. What is the purpose of the map?

2. Who is the audience?

3. What is the topic?

4. What are the format and scale?

5. How will the map be produced and reproduced?

Similarly, in his *Elements of Cartography*, Robinson (1995) echos these sentiments by suggesting that "good design looks right. It is simple (clear and uncomplicated). Good design is also elegant, and does not look contrived. A map should be aesthetically pleasing, thought provoking and communicative" (p. 318). Even though post-representational social cartographers are more concerned with mapping social space than geographic space, Tyner's (1992) goals for map design still apply. Furthermore, her questions are also important for cartographers to keep in mind before they start inscribing space and populating their maps.

The purpose of this section, which is specifically addressed to potential cartographers, is to expound on the goals of social map design in order to offer potential cartographers a place to start. Regardless of their chosen aesthetic, which can vary from the mimetic to the conceptual to the phenomenographic, perhaps even to the abstract, social cartographers need to be sure that their maps are communicating what they want to communicate, and the simplest way to do this is through effective design (Hackett, 1988).

6.2.1   Clarity

Clarity refers to a map's ability to convey its message. According to Tyner (1992), "a map that is not clear is worthless. Clarity is achieved by carefully examining the objectives of the map and emphasizing the important points. At the same time, anything that does not enhance the map message should be eliminated" (p. 44). As we are working from a perspective that views maps as a kind of language, this sentiment echoes the editing advice that novelist Stephen King (2000) gives young novels: "Kill your darlings, kill your darlings, even when it breaks your egocentric little scribbler's heart, kill your darlings" (p. 213). Social maps, in other words, should not be overloaded with material. It is possible to make a second, or even a third.

6.2.2   Order

Order refers to the logic of the map, to the path that the eye follows when viewing the map. According to Tyner (1992), "studies on eye movements show there is considerable shifting of view. The orientation of shapes seem to exert an attraction because the shape of the elements on a page creates axes that give direction" (p. 44). Vertical lines, for example, pull the eye up and down the map, while horizontal lines lead the eye from left to right. For this reason, it is important to consider not only the attention given to auxiliary map elements, such as text and arrows, but also how the use of line weights, colors, and fonts could detract from the purpose of the map. If there is a lot of clutter on the map, which refers back to its clarity, then the audience might spend more time trying to figure out how to read the map than on what the map is attempting to convey.

6.2.3   Balance

Balance refers to the map's visual symmetry. According to Tyner (1992), "every element of the map has weight. These weights must be distributed properly…or the map will appear to be top heavy, weighted to one side, or unstable" (p. 44). For Arnheim (1969), visual weights vary as follows:

1. Centrally located elements have less weight than those to one side.

2. Objects in the upper half appear heavier than those in the lower half.

3. Objects on the right side appear heavier than those on the left side.

4. Weight appears to increase with increasing distance from the center.

5. Isolated elements have more weight than grouped objects.

6. Larger elements have greater visual weight. (pp. 14-15)

In addition to the elements that actually appear on a map, balance is also concerned with white space or *negative space*. While white space serves an important function for geographic space, it is perhaps even more important for social space, because rather than separating one map element from another, it is itself an important element that factors into the map's reading because a space that is unoccupied is just as important as a space that is.

In Figure 22, for example, Rubin's Vase appears next to a social map. Depending on how a person looks at it, Rubin's Vase will appear as either the eponymous vase or two faces looking at each other. In both cases, the white space is just as important as the occupied space. Similarly, the white space on the social map, which has been filled in to set it apart from the knowledge communities that appear as nebulous figures, is just as important as the occupied space because it identifies perceptions that the map's claimants do not possess.

6.2.4   Contrast

Contrast refers to the map's use of line weights, colors, and fonts. According to Tyner (1992), "clarity in large part derives from contrast. Contrast is important in balance and in establishing a visual hierarchy; it also aides in creating an aesthetically pleasing map" (p. 47). Without using lines of varying weights, complementary colors, and appropriate fonts, such as Minion or Gill Sans, the map could appear boring and uninspired. Even if the results are groundbreaking, if the map fails to engage its audience, readers might reject the map's argument because they are unimpressed or, even worse, unable to read the map. Because of a general lack of carto-literacy, it is important for maps to be as simple and as pleasing as possible.

6.2.5   Unity

Unity refers to the interrelationships among the map's elements, such as lettering, purpose, colors, scales, patterns, reproduction, symbols, and topic. According to Tyner (1992), lettering, for example, "is not chosen in isolation. It must be legible over any background colors and shades, and it must not conflict with the chosen symbols. Unity also means that the map appears to be a unit, not a series of unrelated bits and pieces" (p. 47). Other example of cartographic unity include varying pattern type rather than intensity, varying color hue and shade rather than number of colors, and limiting the number of font types (this does not refer to derivatives of the same font, such as bold or italic). Without ensuring that there is unity among the map's elements, it is once again possible to lose the intended audience, even if the study's results are methodologically sound.
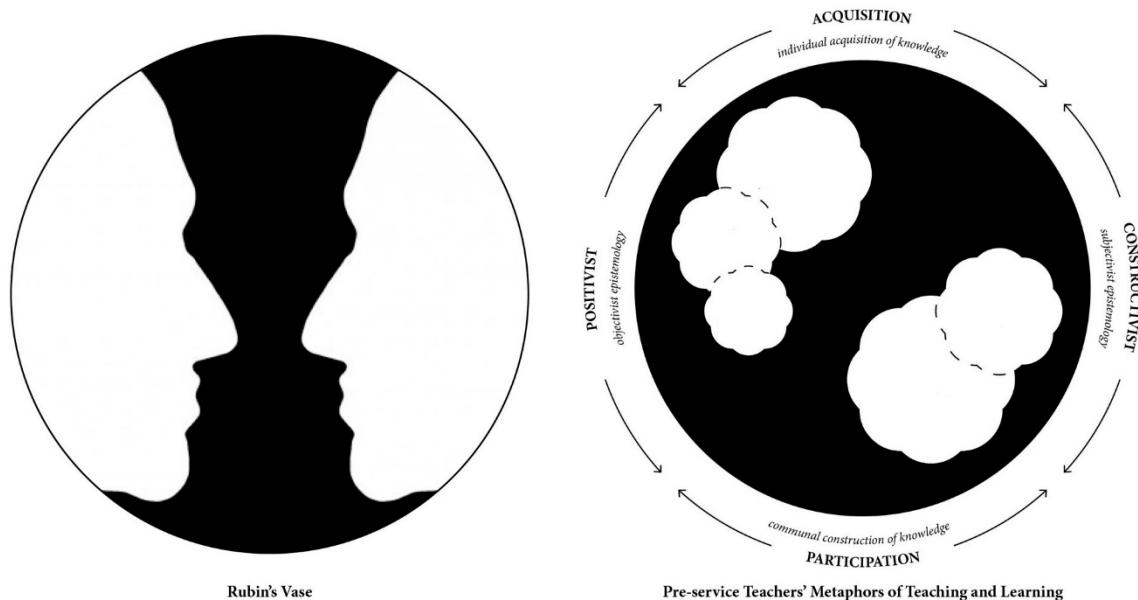
Figure 22. White space in Rubin's Vase and social cartography[2]

6.2.6 Harmony

Harmony refers to how well the map's elements work together. Rather than focusing on the interrelationships among the map's elements, the focus here is on how well all of the elements work together. According to Tyner (1992), cartographers should ask themselves the following kinds of questions when considering a map's harmony: "Are the letter styles in harmony with one another or is there a visual battle on the map? Do the patterns chosen create a pleasing appearance, or do they clash with one another in some manner? Does anything on the map jar the eye?" (p. 48). Achieving cartographic harmony is something that takes practice, and there is nothing wrong with making several iterations of the same map.

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[2] This sense of balance is best represented by the Japanese *IN-YO*, a symbol for creative harmony. Unlike the Chinese *taijitu* (yin-yang), the *IN-YO* represents a dynamic balance as opposed to a static optimum state of being.

Table 7. An assemblage of mapping perspectives by focus and disciplinary base (Paulston, 1993)

Mapping Perspective	Focus On	Disciplinary Base	Exemplary Texts
Cognitive	Mental space; mapping the mind	Humanistic psychology	Downs (1973) Sack (1980)
Comparative	Intellectual space; mapping philosophies	Cultural sociology; Philosophy	Bourdieu (1992) Paulston (1994)
Geographical	Symbolic space; Mapping icons	Cultural geography; Social geography	Harley (1988) Barnes (1992)
Semiotic	Rhetorical space; mapping texts/tropes	Linguistics; Literary theory	Scholes (1982) Apter (1987)
Social	Social space; mapping relations	Sociology; Urban studies	Soja (1989) Lefebvre (1993)

6.3   CRITERIA FOR SOCIAL MAPMAKING

Even though mapping is most readily associated with geographic cartography, a variety of conceptual mapping perspectives have been employed over the years (see Table 7). Semiotic perspectives, for example, have been used to map rhetorical spaces, such as texts and tropes, while comparative perspectives have been used to map different ways of knowing in intellectual space. "While these perspectives are framed in a variety of epistemological assumptions from the mimetic to the intertextual, they all seek to portray disciplinary phenomena—i.e., minds, texts, ideas et al.—as variously interrelated mapped images" (Paulston & Liebman, 1993, p. 40).

Regardless of their chosen medium, these perspectives, which are prone to overlap, all seek to demonstrate how a visual discourse style can help complement more accepted styles of representation. In the previous section, we explored six goals for cartographic design: clarity, order, balance, contrast, unity, and harmony. In this section, we shift from the general to the specific by outlining some criteria for making social maps in particular: border-making, populating, and constructing phenomenographic knowledge.

6.3.1   Border-making

The first step that social cartographers need to take involves drawing the borders of their maps. This is where cartographers get to visually frame what is under study by identifying the range of the positions that their maps will represent. Even though one of the primary purposes of social cartography is to create space for marginalized populations and offer a voice to the voiceless, it is possible for cartographers to exclude claimants from their maps by virtue of how they draw their borders. Considering that post-representational social cartography is an iterative process, the hope is that these kinds of oversights can be corrected as the map passes from one set of hands to the next and its borders are redrawn to be as inclusive as possible.

At this stage, it is also possible for cartographers' bias to be consciously or unconsciously encoded into their maps. On a map of preservice teachers' dispositions for social justice, for example, it is likely, by the very nature of the mapping project, that some spaces in the intertextual mix will be *more desirable* than others. Spaces for dispositions that demonstrate a high level of cognitive complexity, defined here as those perspectives that acknowledge multiple worldviews, are held in a higher regard than those spaces that demonstrate a low level of cognitive complexity.

Rather than alienating the people whose perspectives appear in *less desirable* positions, the hope is that the map will help these people frame their ideas in relation not only to the other perspectives that appear on the map, but also to wider ideas constructing whatever intellectual debate is being discussed. With this being said, there is potential for social mapping to upset those who see the map as a representation of truth rather than as a process that is in a constant state of becoming, open to and in fact encouraging of revision.

6.3.2 Populating the Intertextual Field

Once the map's borders have been drawn, the next step that social cartographers take is populating the map with the perspectives of the researched. Unlike border-making, which is usually solely the responsibility of the cartographer, this stage can be shared by the researcher and the researched, depending on how involved the researched are in the decision making process. Sometimes, cartographers draw and populate their maps before sharing them with the researched. Other times, cartographers encourage the researched to plot their perspectives within the borders that they have previously drawn.

In the former case, social cartographers populate their maps from independently collected data. For a map of preservice teachers' metaphors of teaching and learning, for example, the cartographer might collect data by asking preservice teachers to complete a survey. Similarly, for a map of school principals' perceived boundaries to school improvement, the cartographer might collect data by conducting interviews. In both examples, the cartographer would then map the results before sending the map back to the participants for comment.

In the latter case, social cartographers work with their subjects to populate their maps. For a map of preservice teachers' intercultural competencies, for example, the cartographer might first present what exactly is meant by *intercultural competencies* before asking the preservice teachers' to work in groups to determine how interculturally competent they are in relation to their peers before plotting their perceptions on the map. Again, while this process might appear alienating to some, it is the cartographers' responsibility to explain that the map is a heuristic meant to encourage conversation and help the participants see themselves in relation to ideas larger than any one particular context.

105

6.3.3   Constructing Phenomenographic Knowledge

Without discourse analysis—that is, without an explanation of their form and function—social maps lose much of their significance. Unlike other types of maps, such as geographical maps that represent distance from one space to another, social maps are only as strong as the warrants that social cartographers can make for all of the decisions that went into the border-making and populating of their maps. In other words, social cartographers have to be able to account for every bit of space, whether it is occupied or not.

The connection between social cartography and discourse analysis is well-documented. In his first article on mapping, for example, Paulston (1993) described the importance of textual analysis for the construction of phenomenographic knowledge, especially as it relates to theory mapping in comparative education discourse. "Phenomenography is about the qualitatively different ways in which people experience or think about various phenomena, about the relations between human beings and their world…Through textual analysis, this phenomenographic study seeks not to describe things 'as they are,' but how they have been presented as sedimentations of ways of thinking about the world" (p. 105). Other social cartographers, such as O'Dowd and Mehta, have also acknowledged the link. For O'Dowd (2001), discourse analysis provides an interpretive approach that can be used to study the ways of seeing in a particular discourse, leading to a view of knowledge "as being constructed, rather than found, revealed or discovered…[and] as changing, due to changing" (p. 280). For Mehta (2009), critical discourse analysis "looks at the relationships between discourses, the effects of discourse on human subjectivity, and how power and knowledge circulate through these effects" and can be used to further inform social maps (pp. 1197-1198).

6.4   CRITICAL DISCOURSE ANALYSIS

Critical discourse analysis views language as a form of social practice, and is primarily used to study dominance, inequality, and resistance in the cultural surround. According to Fairclough and Wodak (1997), "describing discourse as social practice implies a dialectical relationship between a particular discursive event and the situation(s), institution(s), and social structure(s) that frame it: The discursive event is shaped by them, but it also shapes them" (p. 258). Because discourse is socially constitutive, as well as socially constructed, discursive practices, the processes by which cultural meanings are produced and understood, have implications for power relations, especially in the context of how things are represented and people are positioned.

Within critical discourse analysis, there are six research strategies that scholars typically use: the discourse-historical, the corpus linguistics, the social actors, the dispositive analytic, the sociocognitive, and the dialectical-relational. While the methods and procedures, not the mention the actual theories, that scholars use for the analysis of discourse can oscillate wildly, critical discourse analysis is generally viewed as a hermeneutic process. According to Wodak and Meyer (2009), however, "the *hermeneutic circle*—i.e., the meaning of one part can only be understood in the context of the whole, but this in turn is only accessible from its component parts— indicates the problem of intelligibility of hermeneutic interpretation" (p. 22). Fortunately, it is possible to address this issue of transparency within the hermeneutic process by providing detailed documentation. In the case of social mapmaking, for example, it is important for cartographers to supply documentation, typically in the form of quotes, to justify their positioning of texts. By allowing the texts to speak for themselves, scholars can begin to account for the natural compression of texts during analysis.

6.4.1 The Dispositive Analytic Approach

The Dispositive Analytic approach to discourse analysis is related to Foucault's (1970) description of discursive phenomena. According to Foucault, discourse, as a culturally constructed representation of reality, is responsible for the production of both knowledge, which tells us who it is possible to be and what it is possible to do, and power, which circulates through society instead of moving in one direction from the top down. Rather than accepting the Foucauldian separation of discursive and non-discursive practices on the one hand and their manifestations on the other, the dispositive analytic approach views social actors and the work they do in the world as the link between discourse and reality.

6.4.2 The Sociocognitive Approach

The sociocognitive approach to discourse analysis uses social representation theory as a critical framework for systematizing phenomena of social reality. From this perspective, "discourse is seen as a communicative event, including conversational interaction, written text, as well as associated gestures, facework, typographical layout, images and any other 'semiotic' or multi-media dimension of signification" (Wodak & Meyer, 2009, p. 25). Because context models are understood as the mental representations of research participants, three additional forms of social representations are relevant to understanding discourse: knowledge, attitudes, and ideologies. The sociocognitive approach focuses on the ways in which writers exercise power in or by their discourse, and, in doing so, concentrates on linguistic markers such as stress and intonation, lexical style, syntactic structures, propositional structures, and repairs.

6.4.3 The Discourse-Historical Approach

Exploring the relationships among genres, discourses, and texts, the discourse-historical approach to discourse analysis works to construct tools for specific social problems. It concentrates its efforts primarily in the field of politics, and usually uses a four-step strategy of analysis: (1) establishing the contents or topics of a specific discourse; (2) investigating discursive strategies; (3) examining the linguistic means of discriminatory stereotypes; and (4) exploring the resulting context-dependent realizations. Ultimately, this methodology "aims to be abductive, because the categories of analysis are firstly developed in accordance with the research questions, and a constant movement back and forth between theory and empirical data is suggested" (Wodak & Meyer, 2009, p. 30).

6.4.4 The Corpus Linguistics Approach

The corpus linguistics approach to discourse analysis adds a layer of quantitative methodology to the discourse-historical approach by using concordance software to analyze large sets of structured texts (corpora) and provide researchers with frequency lists and other more specific measures of statistical significance. According to Upton and Cohen (2009), "The advantages of a corpus approach for the study of discourse, lexis, and grammatical variation include the emphasis on the representativeness of the text sample, and the computational tools for investigating distributional patterns across discourse contexts" (p. 3). By combining quantitative and qualitative methodologies, the corpus linguistics approach attempts to help researchers better understand the different processes at play within the larger discourse.

6.4.5   The Social Actors Approach

The social actors approach to discourse analysis attempts to explain the role of action in the establishment of social structure. From this perspective, representation is based on practice, the actions that people commit, and special attention is paid to the ways in which individuals are capable of influencing and perhaps even permanently altering social structure. There are seven core elements within this approach that researchers try to identify and analyze: (1) actions within given texts; (2) performance modes; (3) actors; (4) presentation styles; (5) specific times; (6) places; and (7) resources. According to Wodak and Meyer (2008), "some of these elements of social practice are eligible, while some are deleted…in a specific discourse. Some are substituted; some reactions and motives are added to the representation" (p. 30).

6.4.6   The Dialectical-Relational Approach

The dialectical-relational approach to discourse analysis suggests that every social practice contains a semiotic element. "Productive activity, the means of production, social relations, social identities, cultural values, consciousness and semiosis are dialectically related element of social practice" (Wodak & Meyer, 2009, p. 27). In much the same way that the discourse-historical approach favors a pragmatic view of discourse, the dialectical-relational approach also seeks to identify and describe social problems prior to analysis. This includes identifying the dominant styles, genres, and discourses that constitute the semiotic element of social problems, as well as considering the range of difference and diversity within these styles, genres, and discourses.

6.4.7   Mapping Texts Constructing the Malmö Longitudinal Study

O'Dowd's (2000) mapping of texts constructing the Malmö Longitudinal Study is based the assertion that "all texts are potentially plural, reversible, open to the reader's own presuppositions, lacking in clear and defined boundaries, and always involved in the expression or repression of the dialogic 'voices' which exist within society" (p. 209). Space is arranged along the horizontal axis from precise concepts, which suggest that scientific representations hold their meanings across contexts, on the left, to fluid concepts, which suggest the opposite, on the right. Similarly, space is arranged along the vertical axis from tacit knowledge, which is understood without being stated, on the bottom, to policy-oriented knowledge, which is produced, on the top (see Figure 23).

In order to show how ways of seeing in the Malmö Longitudinal Study have changed over time, O'Dowd conducted a discourse analysis of six texts from the study according to the following criteria: (1) salience or clarity of view; (2) comprehensiveness or spread of viewpoints; (3) periods of approximately 10 years (from the study's inception in 1939); and (4) purpose as educational research text. Once the texts had been selected, O'Dowd engaged each of them in a close reading and investigated the discursive strategies they employed in order to determine their position on her map. "As the project itself seeks to investigate how the texts represent knowledge, the choosing, judging and interpreting activities in the texts are seen to construct different conceptualization of knowledge" (O'Dowd, 2001, p. 280). From here, O'Dowd identified different knowledge communities on the map and demonstrated their relationships by exploring the result context-dependent realizations, which are characteristics of the discourse-historical approach to critical discourse analysis.

111

Figure 23. Mapping Texts Constructing the Malmö Longitudinal Study (2000)
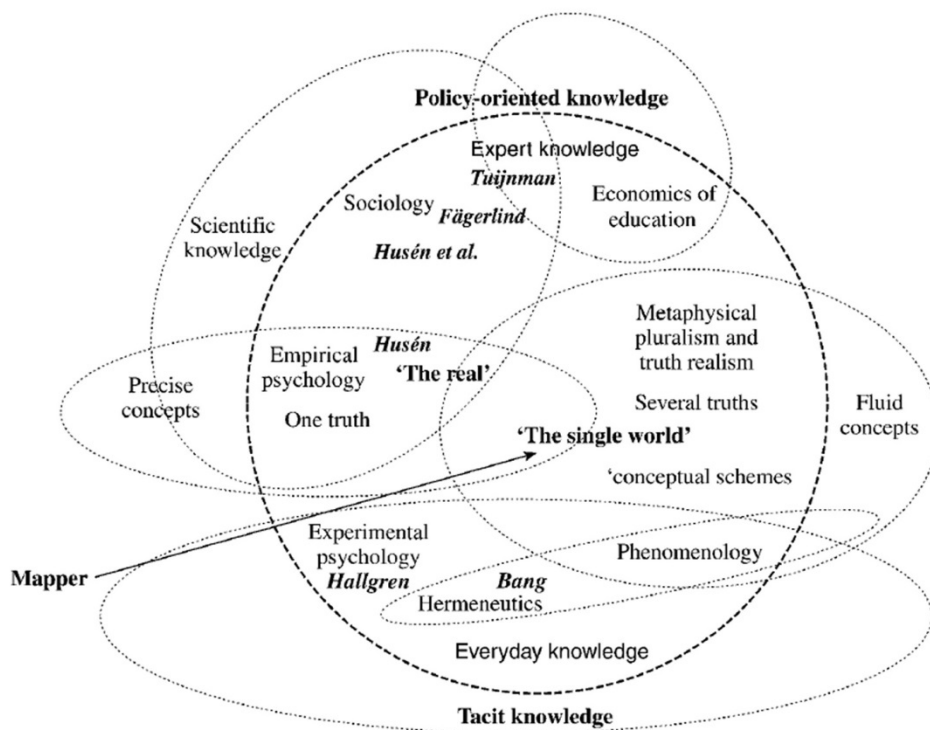
Issue or Debate	texts constructing the Malmö Longitudinal Study	
Range of Texts	Bang, Fagerlind, Hallgren, Husen, Husen & Emanuelsson, Tuijnman	
Range of Positions	precise concepts fluid concepts	tacit knowledge policy-oriented knowledge
Knowledge Communities	conceptual schemes, economics of education, empirical psychology, everyday knowledge, expert knowledge, experimental psychology, hermeneutics, etc.	

6.4.8   Limitations of Critical Discourse Analysis

The limitations of critical discourse analysis are related to the fact that competing truth claims are possible regarding the same discourse. According to Powers (2001), "this seems like a serious limitation until one considers that the same limitation applies to other methods of inquiry as well. Any scientific study of, for example, the genetic cause of schizophrenia may be followed by an equally well performed study that refutes the evidence and provides compelling evidence for a viral cause of schizophrenia" (p. 64). Another limitation is that the results of a discourse analysis are not generalizable to other situations. What is claimed to be true about one discourse is not applicable to another, unless of course another discourse analysis had similar findings.

It is important to remember that a discourse analysis does not claim to show what people or societies think or believe. Rather, what we can learn is how specific texts or parts of texts are arranged to construct a certain argument, which can then be examined for its role in larger contexts. "More importantly, we can demonstrate with confidence what kind of statements actors try to establish as self-evident and true. We can show with precision what rhetorical methods they picked to communicate those truths in ways they thought would be effective, plausible, or even natural" (Schneider, 2013, para. 31).

In the context of social cartography, critical discourse analysis can be used to support the positioning of texts within an intertextual field. Without it, social maps are open to the kind of criticism that views them as little more than intellectual parlor tricks, the fancy juxtaposition of big words or complex ideas without any means to ground them in actual research. Even though critical discourse analysis is also open to criticism, it still provides the kind of phenomenological evidence required to make the case for its validity.

6.5   APPROXIMATING REALITY

Even though visual images have been historically dismissed as unreliable, they have more recently been embraced through perspectivism and phenomenology by more contemporary thinkers such as Nietzsche, Merleau-Ponty, and Paulston. In order to demonstrate their legitimacy for research; however, generated images, including maps, paintings, and sculptures, still have to show how they are capable of some combination of approximating an external reality, conveying meaning, or moving their audience to social action.

Even though the maps of social cartography exist simultaneously in two of the domains required for visual images to count as data for research, the interpretivist and the critical, the use of critical discourse analysis provides an additional layer of support for using social maps for educational research (Sullivan, 2005). By conducting a close reading of their selected texts, from the theories that constitute a particular discourse to the perceptions of the people engaged in a particular form of education, scholars are in a better position to justify their decisions for the visual representation of knowledge communities within their chosen discourse.

While social cartography still has a long way to go in terms of gaining mainstream acceptance in educational research, perhaps because as Ruitenberg (2007) suggests many scholars lack an ability to read or write maps or have limited access to mapping software, there is much to be gained by considering the spatial nature of the educational experience. Especially now, as we enter into an age where people want access to information as quickly as possible, it is important to provide this information in formats, such as social maps, that not only offer user-friendly experiences, but also demonstrate an attention to detail that might not be readily available from more temporal discourses.

7.0   BUILDING AN AESTHETICS FOR SOCIAL CARTOGRAPHY

 "Aesthetic vision engages a sensitivity to suggestion, to pattern, to that which is beneath the surface itself" (Barone & Eisner, 212, p. 37). In order to construct an aesthetic framework for drawing social maps, one that pays attention not only to detail and form, but also to its post-representational underpinnings, I looked first to Crane's (1900) *Line and Form* and then to Barone and Eisner's (2012) criteria for assessing visual images in educational research, including concision, coherence, and illumination.

For Barone and Eisner, concision "pertains to the degree to which [an image] occupies the minimal amount of space or includes the least amount of verbiage necessary for it to serve its primary, heuristic purpose of enabling members of an audience to see social phenomena from a fresh perspective" (p. 149). Social maps, therefore, need to be just large enough to demonstrate the positions of the claimants while also acknowledging the white space *of* and around them. Coherence is related to the law of *pragnanz* that gestalt psychologists use to describe the way the elements in a complex form stick together. Finally, illumination pertains to that way an image "illuminates a terrain, a process, an individual. It sheds light often by defamiliarizing an object or a process so that it can be seen in a way that is entirely different than a way in which customary modes of perception operate" (p. 154). Because so much of educational research is presented in temporal forms, such as articles and reports, the spatial nature of social maps, as conceptual-phenomenological landscapes, naturally lends itself to the illumination of new terrains.

7.1   DRAWING THE MAP

Even though Paulston (1999) was hesitant to offer explicit advice for making social maps. Even though he eventually provided us with some *cookbook* instructions, he did so reluctantly, acknowledging the horror of his postmodern students and colleagues. While I share Paulston's hesitancy to pin anything down with what might be described as a Cartesian certainty, the collaborative nature of my own mapping project allows for the explication of my own particular aesthetic. With the understanding that this is but one method for cartographic design, here are some Paulston-inspired suggestions for making post-representational social maps:

1. Choose the issue or debate to be mapped;

2. Select the widest range possible of texts that construct this issue and, with close reading, translate their defining rhetorical characteristics, ideas, and worldviews;

3. Based on close reading, identify the range of positions in the intertextual mix;

4. Draw the map's borders as an open circle with arrows suggesting a seamless exchange of ideas across the range of positions. Add a dashed circle just inside of the open circle to suggest a willingness to explore future iterations of the map;

5. If applicable, identify paradigms at the intersections of the range of positions, and add them to the map in a closed circle within its borders;

6. Populate the map with the texts, either individually or as members of larger knowledge communities. Different shapes may be used to represent the texts; however, circles or *clouds* are preferable to allow for the shifting/evolving nature of positions in space;

7. Field test the map with the individuals or knowledge communities involved**.**

Issue or Debate	the relationship between service learning and civic engagement	
Range of Texts	the perceptions of 12 students who participated in a school-sponsored service learning trip to an elderly community in Appalachia	
Range of Positions	passive active	apathetic empathetic
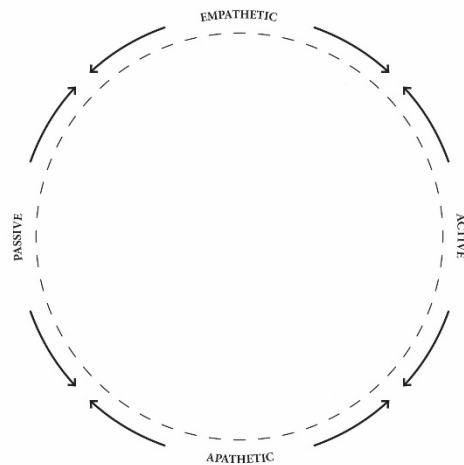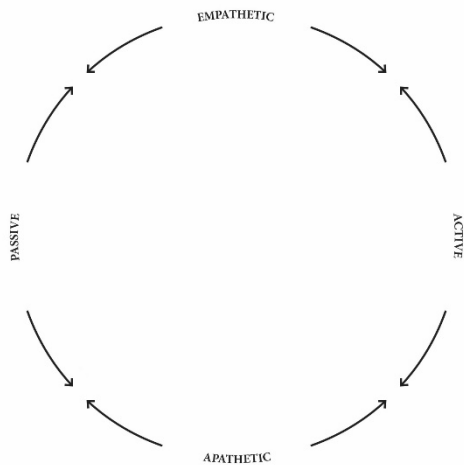
	empathetic/passive	empathetic/active	apathetic/active	apathetic/passive
Paradigms	indolent	proactive	compliant	disengaged
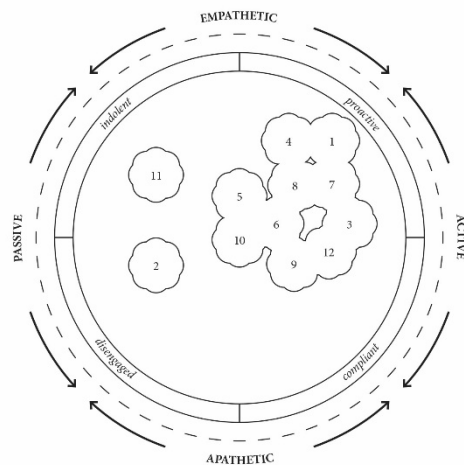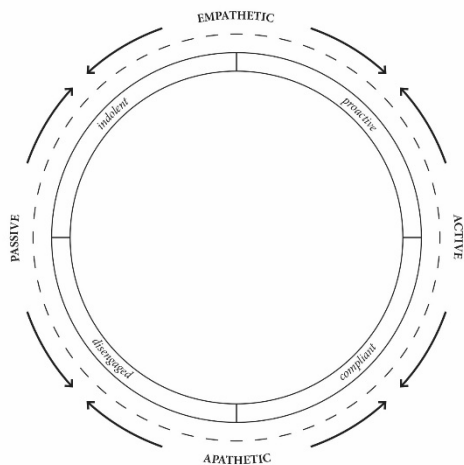
Figure 24. An example of my mapping technique for drawing post-representational social maps. It is important to note that this map was accompanied by a table detailing the students' perceptions, as well as interview transcripts, that justified their placement on the map. This study, co-authored by Jessica Mann, is currently in press.

7.1.1 The Outer Ring: Borders/Outliers

According to Paulston (1999), "this process of mapping and translating seeks to open up meanings, to uncover limits within cultural fields, and to highlight reactionary attempts to seal borders and prohibit translations" (p. 454). My maps, which represent but one possible figuration for social cartography, are shaped like circles not only because a circle suggests potential, as an embryonic symbol, but also because it implies movement in its association with the cosmos. The arrows that delineate my maps borders' suggest that space is fluid, allowing for a seamless exchange from one perspective to the next, while the dotted lines within allows for expansion as future iterations of my maps are imagined and key texts are added to or removed from the mix. These dotted lines may be read as *flourishes*, seeing as they do not actually affect my maps' borders or the claimants' positions inscribed within; however, they also help my maps achieve a sense of balance by adjusting the line weights for map readers.

As postmodern constructions, open to all ways of seeing, my maps are defined by their outlying positions. Unlike technical rationalist representations, which prefer "to plot a central tendency where outliers…simply disappear," they supply an unhindered field where the proposed texts (perspectives, ideas, etc.) can interact without the influence of objective totalities (p. 453). While the use of outliers may seem to establish dichotomies on cardinal sides of the map, I align with Nicholson-Goodman (1996) in her use of the term in its astronomical sense, which holds that a celestial body, such as the moon, is in a dichotomous state whenever half of its disc is visible. Applied to social cartography, this suggests that dichotomies, rather than acting divisively, actually encourage the emergence of mini-narratives by acknowledging *half-light* between the poles. See Table 8 for examples of possible border/outlier combinations.

Table 8. A bricolage of terrains for making post-representational social maps

Axiological		
relativist / universalist	cognitivist / non-cognitivist	ecocentric / anthropocentric
ethics / aesthetics	atomism / holism	monism / pluralism

Epistemological		
internalism / externalism	a priori / a posteriori	materialist / immanence
constructivism / positivism	empiricism / idealism	personal / scientific

Ontological		
universal / particular	substance / accident	abstract / concrete
essence / existence	determinism / indeterminism	modern /postmodern

Philosophical		
dualism / monism	faith / intellect	freedom / necessity
consciousness / matter	soul / body	worship / fetishism

Theoretical		
positivism / interpretivism	hermeneutics / poetics	constructivist / essentialist
humanism / functionalism	Marxian / Hegelianism	semiotic / reflexive

Joseph Campbell (1949)		
emanations / dissolutions	enlightenment / compassion	truth / illusoriness
nirvana / samsara	subject / object	the jewel / the lotus

Daniel Casebeer (2013, 2014, 2015)		
unifocal / multifocal	acquisition / participation	essentialist / non-essentialist
apathetic / empathetic	receptive /resistant	passive / active

Rob Kitchin, Chris Perkins, and Martin Dodge (2011)		
static / becoming	nomothetic / ideographic	text / context
empirical /theoretical	functional / symbolic	process /form
absolute / relative	structure / agency	map / territory

JoVictoria Nicholson-Goodman (1996, 2009, 2012)		
orthodoxy / perspective	ethic of uncertainty / ethic of progress	
activism / control	logic of erudition / aesthetic sensibility	

Rolland G. Paulston (1993, 1994, 1996, 1997, 1999, 2000)		
idealist / objectivist	equilibrium /transformation	critical theorist / interpretivist
systems / actors	destabilizations / certainties	visual forms / verbal forms
scientism / solipsism	heuristic / mimetic	global / incremental change
constructed / foundational	big story / little story	culture / society

7.1.2   The Middle Ring: Paradigms/Knowledge Communities

The middle ring, which provides a space for any paradigms identified at the intersections of my maps' outliers, is only necessary when I need to offer my readers a more nuanced understanding of the intertextual field that appears at the map's core. In Figure 24, for example, it was important to group the participants' perceptions within knowledge communities—that is, indolent, proactive, compliant, and disengaged—in order to give them some common vocabulary to use when they were discussing the map among themselves.

7.1.3   The Inner Ring: The Intertextual Field

The innermost ring, also referred to as the intertextual field, provides a space for the maps' claimants to interact not only with one another but also with the outliers. At this point, it is important to remember that each claimant is possessed of its own sense of *gravity*. This means that the inclusion or subsequent exclusion of each perspective alters the position of every other claimant on the map. This is not to suggest that a disengaged perspective in Figure 24, for example, would suddenly appear proactive in the presence of an even more apathetic perspective. Both of these disengaged perspectives would still fall somewhere within the disengaged knowledge community, because the perspectives are positioned in relation to the outliers as well as to each other. The justification for each claimant's position should appear either in a table or in the discourse analysis portion of whatever study the map is included with. Remember: my social maps are heuristic devices meant to encourage discussion; however, they cannot exist without a written narrative to support them.

7.2   SHARING THE MAP

In much the same way that a poet must choose her words carefully, arranging them like so many flowers in an Ikebana vase, [3] so too must social cartographers work to ensure that each element on their maps is working toward a common goal. Each map is a poem, willed into being by mapmakers and map users alike, informed by the myriad contexts in which it was written and subsequently read.

Although there is no one way to draw a social map, there are certain steps that all social cartographers must take. As we discussed in the previous chapter, post-representational social cartography involves border-making, populating, and constructing phenomenographic knowledge. Perhaps even more importantly, it also involves sharing maps with others, especially with those who were involved in their initial construction, and being open to the possibility of re-mapping as the researcher gets a better sense of how the subjects see themselves in relation to how their ideas, dispositions, or perceptions have been portrayed.

Even though a social map is capable of standing on its own, meaning that it can convey its message to those whose experiences did not directly contribute to its initial existence, it is static in relation to the kind of dynamic conversation it can produce among its claimants. In the following chapters, I offer three examples of how I have used my particular aesthetic framework for post-representational social cartography to map classroom texts. In particular, these studies explore preservice teachers' dispositions for social justice, metaphors of teaching and learning, and intercultural competencies as they relate to the first year field experience.

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[3] Ikebana ("living flowers") is the Japanese art of flower arrangement. According to Sato and Yoshimura (2008), "Ikebana is an art in Japan in the same sense that painting and sculpture are arts elsewhere. It has a recorded history, it has undergone a coherent development, it has a technical discipline, it is backed by articulate theories, and it has remained a vital medium for creative expression" (p. 11).

8.0   EXAMPLES FROM TEACHER EDUATION DISCOURSE

The purpose of this chapter is to demonstrate the practical applications, rather than the theoretical implications, of social cartography for mapping educational texts. In particular, this chapter offers three article-length studies of how a cartography of relations can be used to map preservice teachers' dispositions for social justice, metaphors of teaching, and perceptions of cultural diversity awareness.

It is important to remember that each study offers but one particular method for revealing the spatial nature of the educational experience. In the first study, for example, which explores preservice teachers' dispositions for social justice, the map reveals the participants' level of cognitive complexity in relation to issues of empathy and apathy, of multifocal and unifocal worldviews. A similar study, however, which attempts to map the same terrain, might examine the participants' level of cognitive complexity in relation to something else, such as issues of equity or equality.

It is also important to remember that the researcher's aesthetic choices, such as the decision to use arrows instead of lines to delineate the map's borders or the decision to use clouds instead of circles to represent the map's claimants in the intertextual field, do not affect the way the map functions from a philosophical perspective. The many flourishes that cartographers can include on their maps, including explanatory text or graphical underlays, in other words, are personal (or context specific), and they can serve as much or as little purpose as the cartographer intends.

122

Table 9. Models of cooperation for post-representational social cartography

	Researcher *Creates the Border* R	Researcher/Participants *Create the Border* C	Participants *Create the Border* P
Researcher *Populates the Field* r	**Rr**	**Cr**	**Pr**
Researcher/Participants *Populate the Field* c	**Rc**	**Cc**	**Pc**
Participants *Populate the Field* p	**Rp**	**Cp**	**Pp**
Non-cooperative	**Semi-Cooperative**		**Cooperative**

8.0.1   Models of Cooperation

Depending on how comfortable their subjects are with social cartography, researchers can modify their mapping practices to suit their needs and interests. On the one hand, researchers can assume control of the entire mapping process, creating the borders and populating the fields from the data they collect. On the other hand, researchers can step aside, encourage their subjects to assume control, and interpret the results. In between these extremes, there are many other opportunities for researchers and their subjects to work together to construct social maps. To help readers quickly determine how social maps were created, researchers should code their maps according to the models of cooperation (see Table 9).

8.1   MAPPING DISPOSITIONS FOR SOCIAL JUSTICE

Teachers with middleclass backgrounds often struggle to understand and motivate students with less privileged upbringings (Asher, 2007; Barnes-Johnson, 2008). In the case of White teachers working with disadvantaged minority students, for example, cultural differences, especially in terms of language and dialect, can make it difficult to communicate (Maylor, 2009). When students begin to fall behind, teachers in working-class schools may look at low achievement in their classrooms and decide that their students are actually incapable of learning. This perspective can lead to self-fulfilling prophecies because teachers who question their students' potential are less likely to put in the effort to create more productive learning environments.

According to the United States Department of Education (2014), non-White minority students, including Hispanics and African Americans, are expected to collectively outnumber their White counterparts for the first time in 2014 in America's public schools. While White students will remain the largest social group for some time, currently accounting for more than 49% of the total enrollment, their numbers are projected to dwindle. Teacher demographics, on the other hand, are shifting at a much slower rate. Even though Black students make up over 16% of the student population, for example, only 7% of the teaching force identifies in the same way (USDE 2014). For Dee (2004), this disparity is problematic because racial interactions can impact student performance. For example: "pupils may trust and respect someone with whom they share a salient characteristic, making learning come more easily" (pp. 53-54).

8.1.1 Dispositions for Social Justice

While there are efforts in place to address racial disparity and recruit more minorities to teacher education programs, it is just as important for these programs to attend to the students they already have by focusing on the development of teacher dispositions. Dispositions, or habits of the mind, are beliefs that manifest in observable actions (Murrell & Foster, 2003; Thompson, 1995). In the context of education, this typically refers to such large ideas as diversity and social justice, defined here as "an understanding of oppression and inequality which allows greater insight into methods of eradicating them," that teachers may exhibit through inclusive language and behaviors (Sleeter, 1996, p. 239).

The relationship between educators' beliefs and practices is well established (Bryan & Atwater, 2002; Combs, 1972; Katz & Raths, 1985; Richardson, 1996; Rokeach, 1968). According to Fang (1996), beliefs "act as a filter through which a host of instructional judgments and decisions are made" (p. 51). The decision to call on a particular student, for example, may depend on what the teacher believes about that student's ability to advance the conversation. For Kincheloe and McLaren (2002), teachers' beliefs are so germane to the understanding of their practice that they can be used to examine how dominant ideologies are transferred from one generation to the next. They argue that an acceptance of the status quo will continue to thwart our efforts to live in democratic communities, that "power wielders with race, class, and gender privileges have access to the resources to promote ideologies and representations in a way individuals without such privilege cannot" (p. 104). In order to ensure equitable treatment, it is therefore important for teacher education programs to focus on the preparation of socially conscious educators who are aware of how their behaviors may affect their students.

125

8.1.2   Culturally Responsible Pedagogy

One of the ways that teacher education programs can help their students develop dispositions for social justice is through culturally responsible pedagogy. According to Ladson-Billings (1995), this is "a pedagogy of oppression not unlike critical pedagogy but specifically committed to collective, not merely individual, empowerment…[which] rests on three criteria or propositions: (1) students must experience academic success; (2) students must develop and/or maintain cultural competence; and (3) students must develop a critical consciousness through which they challenge the status quo of the social order" (p. 160).

This kind of teaching not only recognizes that students approach education from different sociocultural perspectives, but also focuses on the *cultural uniqueness* of each student (Gay, 2000). Diversity is framed as an opportunity, rather than as an obstacle, and difference is situated within a multifaceted discourse that encourages students to reflect on other people's strengths instead of their perceived weaknesses. Furthermore, culturally responsible pedagogy is not so much about exploring the traditional ideas surrounding multiculturalism, such as religious or cultural celebrations, as it is about respecting the complex nature of human experience (Brown-Jeffy & Cooper, 2011).

In this study, which takes the view that culturally responsible strategies can help teacher educators recognize faulty ideologies, social cartography provides a lens through which to examine preservice teachers' dispositions for social justice (Hill-Jackson & Lewis, 2010; Paulston, 1996). While there are many challenges facing teacher education programs, one of the most important is the preparation of teachers who can effectively teacher students whose sociocultural backgrounds differ from their own (Banks, 2000; Irvine, 1990).

8.1.3 Method

This study maps the dispositions of 27 preservice teachers enrolled in an undergraduate course on the social foundations of education. With its dedication to producing socially conscious educators, this course was chosen specifically for its capacity to help teacher candidates reflect on their beliefs. In order to map these beliefs, it was important to identify not only the range of positions in the intertextual mix, but also the textual communities, or disposition groups, that share a way of seeing and communicating reality. This means that making a social map involves not only constructing the map's boundaries, but also establishing the spatial relationships among the texts—in this case, the students' perspectives—contained within. Once the boundaries have been formed and the relationships among the texts have been cited, it is important "to explicate what point of view is being utilized in the study, to disclose the interrelations of the field or site itself, and to convey something of the personal or professional experiences that have led" to the use of a particular perspective (Paulston, 1999, p. 454).

As a postmodern construction, open to all ways of seeing, the map is defined by its outlying positions. Unlike modernist represenations, it supplies an unhindered field where the dispositions can interact without the influence of objective totalities (Paulston, 1996). Space is arranged along the horizontal axis from unifocal worldviews on the left to multifocal worldviews on the right. Similarly, space is arranged along the vertical axis from apathetic perspectives on the bottom to empathetic perspectives on the top. The first dimension illustrates the position of the participants' dispositions with regard to how they see and accept life experiences from multiple points of view, and the second dimension illustrates their dispositions in relation to how they are able to imagine life as someone from a less privileged upbringing.

A third axis, running from the lower left side of the map to the upper right, creates a space for dispositions that reflect a low cognitive complexity at the intersection of unifocal perspectives and apathetic worldviews, as well as a space for dispositions that reflect a high cognitive complexity at the intersection of multifocal perspectives and empathetic worldviews. Accordingly, the longitudinal fissure in the underlay helps divide the map in half: the hope being that most of the perspectives will appear in the upper right.

Even though it might seem problematic to create a space for preservice teachers who exhibit a low cognitive complexity on the map, it is important for teacher education programs to be able to identify those candidates who might not be suited for classroom teaching. While this exercise cannot stand alone in this pursuit, it is worth mentioning that some teacher education programs have made disposition assessment necessary for advancement (Lindenwood, 2015).

In order to help determine the positions of their dispositions on the map, the participants kept disposition journals, which asked them to reflect on their actions in the context of respect, democratic participation, and social justice (Huber-Warring & Warring, 2006). Along the horizontal axis, participant responses that indicate a unifocal worldview include, "I'm not a racist, some of my best friends are black," while responses that indicate a multifocal worldview include, "Teachers should consider all types of perspectives in their lesson plans." Along the vertical axis, participant responses that indicate an apathetic perspective include, "Why should I care about Black History Month? I'm sick of all of these additional diversity programs," while responses that indicate an empathetic perspective include, "It's sad to think that Native American culture is still being appropriated by sports teams." In all cases, the use of quotes helps to show that the placement of the participants' dispositions on the map was not arbitrary, that the candidates were directly responsible for the assertion and construction of truth claims.

8.1.4 Results

A close reading of the students' journals revealed the six disposition groups that appear on the map (see Figure 25). The largest group of preservice teachers expressed unifocal perspectives that were resistant to the lived experiences of others. The members of this group were apathetic to issues of race and class, often advancing a narrative of personal responsibility in favor of a view that recognized systemic racism. The second largest group was more open to alternate perspectives, but they were also fairly apathetic. While they recognized that different people are capable of looking at the world in different ways, they did not feel as if they were able to help enact social change. The third largest group also held on to unifocal perspectives; however, these participants expressed much more concern for others than members in either of the first two groups. They were hesitant to challenge the status quo, but they were open to the idea that our current system caters to some social or cultural groups at the expense of others.

The fourth largest group was the first to appear entirely in the upper right half of the map, indicating a high level of cognitive complexity. These preservice teachers not only acknowledged multiple perspectives, they also demonstrated a significant amount of empathy toward people with less privilege. The fifth largest group also appeared entirely in the upper right half of the map. These participants were committed to the eradication of inequality, and their work reflected a deep understanding of issues of social justice. Alternately, the preservice teachers in the sixth and smallest group demonstrated the lowest level of cognitive complexity. They were staunchly committed to the status quo and resisted all attempts to look at the world from different perspectives. In all cases, it is important to remember that the participants' dispositions were mapped in the context of this particular class.

EMPATHETIC

actively demonstrates concern for others

HIGH COGNITIVE COMPLEXITY

UNIFOCAL

resistant to the lived experiences of others

MULTIFOCAL

open to the lived experiences of others

LOW COGNITIVE COMPLEXITY

disinterested in the plight of others

APATHETIC

III V I IV II VI
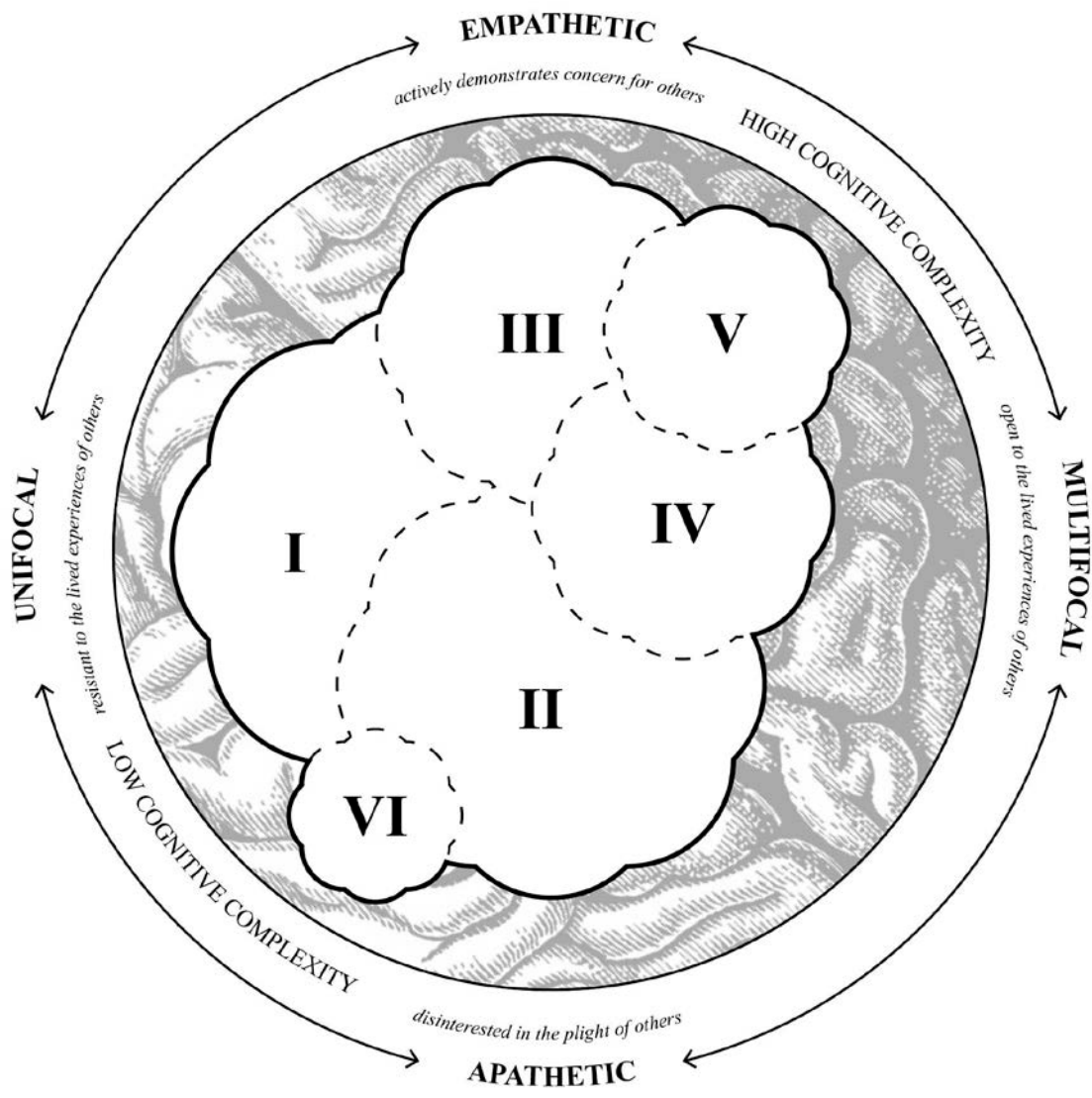
Issue or Debate	preservice teachers' dispositions for social justice	
Range of Texts	the dispositions of 27 preservice teachers enrolled in an undergraduate course on the social foundations of education	
Range of Positions	unifocal worldviews multifocal worldviews	apathetic perspectives empathetic perspectives
Knowledge Communities	high cognitive complexity, low cognitive complexity	

Figure 25. Mapping Preservice Teachers' Dispositions for Social Justice (Rr)

8.1.5 Discussion

The map suggests that the majority of the preservice teachers that participated in this study perceived knowledge and concepts in relatively unsophisticated ways. This may be because they lack an understanding of how issues of equity or social justice relate directly to them, or, as Hill-Jackson and Lewis (2010) suggest, "[they] look at fairness from an individual, as opposed to a collective, perspective and struggle with the bigger picture of social domination and institutionalized racism that prevent generations from achieving group success" (p. 73). One teacher candidate, for example, had this to say about college scholarships: "I must have applied for at least a dozen scholarships. Probably more. But all of the money out there is going to minorities." Instead of considering systemic issues, such as institutionalized racism, this candidate was unable to frame exclusion from anything outside of an individual perspective.

Even though some of the preservice teachers who displayed unifocal worldviews were able to acknowledge different perspectives, most of them struggled to actively show concern for others, going so far as to exhibit distain for those who they felt were incapable of taking care of themselves. One candidate, for example, was concerned that programs that offered lunch at reduced prices to economically disadvantaged students were taking away from the educational opportunities of other students: "I don't understand why we had to pay for someone else's kids [to eat]. I never got reduced lunch, and, I'll tell you what, the lunches they used to give away at my school were significantly better than the ones I could afford." While this candidate believed that social class was a factor in academic success—"Some kids have it harder than others. Poor families often struggle to send their kids to college"— she struggled with acknowledging "fairness" in situations that she could actually observe.

131

In contrast to the majority of the participants, some of the preservice teachers in this study demonstrated high levels of cognitive complexity. Two candidates in particular were able to articulate the need for being conscious of the lived experiences of others. One of them wrote: "Classroom engagement is often a direct reflection of teachers' expectations. We can't necessarily blame students for dropping out without examining the conditions of the classrooms in which they were expected to 'learn.'" Other candidates also demonstrated multifocal perspectives; however, they were less certain of the roles they could play in enacting social change. One of these candidates, for example, wrote about her frustration in the context of working with school officials: "I think it's fun to learn about different cultures and perspectives, but I really struggle with the way that diversity is sometimes jammed down our throats. I'm always hearing about how rough some kids have it, but, so far, no one has been able to provide me with any solutions. Instead, they just keep harping on the problems."

As this study suggests, unifocal and apathetic thinking is surprisingly common in teacher education programs (Hill-Jackson & Lewis, 2010). According to Villegas (2007), "the line of research shows that prospective teachers generally enter teacher education believing cultural diversity is a problem to overcome and that students of color are deficient in some fundamental way" (p. 374). While the map initially seems to confirm these findings, offering yet another example of how teacher education programs are struggling to assess the beliefs of preservice teachers, it also provides us with a sense of hope, not only because some of the candidates demonstrated a high level of cognitive complexity, but also because even those who charted lower are now aware of their dispositions, and, through reflection, can begin to come to terms with their ideological positions. Hopefully, this will encourage them to take a more active role in issues of equity and social justice.

8.1.6 Culturally Conscious Critical Reflection

After the map was created, it was used as a heuristic device to encourage culturally conscious critical reflection, a process that Huber-Warring and Warring (2006) suggest "facilitates an understanding of the process necessary for teachers to understand and engage students so that both parties are better able to develop the significant elements of the desired dispositions" (p. 48). Not only were the teacher candidates invited to comment on what the map suggested about the cognitive complexity of their class, as well as of the field in general, they were also encouraged to challenge the placement of their individual dispositions on the map. This led to a discussion about the importance of reflection in overcoming some of the barriers and resistance to empathetic and multifocal worldviews. By questioning that which is otherwise taken for granted, such as the invisible constructs of privilege and power, it is possible to see the world from new perspectives. These perspectives, which empower us to question the status quo, can help teachers situate their practices in educational environments that are safe and welcoming to all of their students, not just the ones with whom they can immediately identify (Gay, 2000).

When preservice teachers develop dispositions for social justice, they become better prepared to work with diverse populations of students, regardless of their own cultural identities. In this particular case, the use of social cartography provided a class of preservice teachers that demonstrated a relatively low level of cognitive complexity with an opportunity to visualize and reflect on their latent beliefs about diversity and multiculturalism. By exploring democratic principles, establishing inclusive and caring communities, and reflecting on issues of equity, human rights, and social justice, it is possible to cultivate a generation of teachers with an awareness of and a responsibility for the world around them.

8.1.7 Limitations and Recommendations for Future Research

In spite of its capacity to engender quality teachers, the critical study of dispositions is often marginalized in teacher education discourse, and many preservice teachers graduate from preparation programs without having their beliefs examined (Brown, 2005; Schussler, Bercaw, & Stooksberry, 2008). This could be because dispositions are too loosely defined to be fairly assessed. Murray (2007), for example, argues that "*disposition* remains a superfluous construct in teacher education because it is largely tautological with the teacher's behavior that it seeks to explain" (p. 386). Others have gone so far as to suggest that teacher education programs that attempt to assess their students' thoughts in relation to difference and structural inequality are guilty of "political screening" (Hines, 2007) and "thought control" (Leo, 2005), of promoting a liberal bias that eradicates, rather than celebrates, alternate worldviews.

Social cartography, as a method for helping preservice teachers visualize and respond to difference, also has its drawbacks. According to Ruitenberg (2007), the reluctance of educational scholars to explore a cartographic discourse is due not only to "the commonly limited ability to read and write maps," but also to a lack of access to the kind of "computer software that can aid in the construction of [those] maps" (pp. 21-22). For others, the lack of objectivity and generalizability make social maps too context dependent, reducing the process of discourse analysis to little more than an exercise in "intellectual gymnastics" (Watson, 1998, p. 108). Even when critics are capable of appreciating maps as local texts, there are still concerns that social cartography may not follow through on its promise to provide space for mininarratives, and, in doing so, may become another totalizing practice for power wielders who would feign an interest in social justice while promoting their own exclusive ideologies (Torres, 1996).

134

Future research on the study of dispositions needs to focus on establishing clear definitions for assessment. As Hill-Jackson and Lewis (2010) suggest, "let us avoid generic and cultureless orientations that do not force teachers to reflect sincerely upon the ideologies they bring to teacher preparation programs" (p. 84). It is important for preservice teachers to engage in culturally conscious critical reflection not only because it can bring them to greater states of self-actualization, but also because it can help them identify those areas in which they may foster apathetic or unifocal worldviews, which are detrimental in the context of the transmission of dominant ideologies to future generations. Without a consensus among scholars about what it means to cultivate democratic habits of the mind, it becomes difficult to talk about the importance of developing dispositions for social justice without succumbing to the tautological language that Murray (2007) warns us about.

Future research also needs to be open to new culturally responsible strategies, such as social cartography, that can help preservice teachers identify faulty ideologies. As an alternative to narrative discourse, social mapping offers teacher candidates a unique opportunity to represent knowledge and visualize difference, especially as it relates to their beliefs regarding their future students. There is always a need for new systems that can help us identify and organize educational variables, and it is important for the field to embrace, or at least consider, all such methods for gaining fresh perspectives on issues related to equity and social justice (Rodman, 2011). There is a long way to go before the teaching force achieves racial parity; however, it is possible, through culturally responsible pedagogy, for the power brokers of our time to acquire a deeper understanding of other cultures. In doing so, they will be better equipped to model the kind of inclusive beliefs and practices that are necessary for working with our increasingly diverse population of students.

135

8.2 MAPPING METAPHORS OF TEACHING

Metaphor is generally understood as a comparative figure of speech. When Ophelia compared Hamlet to a rose, for example, she was not only emphasizing his gentleness, but also alluding to his capacity for violence (Shakespeare, 2003). For Lakoff and Johnson (1980), however, metaphor is more than just a poetic device. They contend that "metaphor is pervasive in everyday life, not just in language but in thought and action" (p. 3). Because metaphor structures our most basic understanding of experience, allowing us to use what we know to make assumptions about what we do not, it follows that our actions are then mediated by how metaphor allows us to see phenomena from a particular point of view, by how our subconscious assimilates and makes sense of our environment.

One of the ways that researchers examine preservice teachers' beliefs is by studying the cognitive devices they use to situate themselves in the profession (Bullough, Knowles, & Crow, 1991; Hammerness, 2003; Reddy, 1978). According to Tobin (1990), "teaching can be defined in terms of roles undertaken by teachers. And just as metaphors are at the basis of all (or most) concepts, the metaphors used to make sense of the main teaching roles can be the focus for reflection and change" (p. 125). Similarly, Martínez, Sauleda, and Huber (2001) assert that "metaphors exert powerful influences on processes of analyzing and planning in education" (p. 966). In particular, they find that metaphors can have a profound effect on teachers' thinking, and further suggest that they can be used as a catalyst for deeper understanding.

Fry and Fleeners (1997) argue "metaphor offers new perceptions of reality, ultimately the means to communicate beyond the literalness of experience" (p. 27). As a tool for examining the ways in which knowledge is constructed, metaphor can help researchers unpack preservice teachers' latent assumptions and help them reflect on their identities in relation to their future students. After all, "a large part of self-understanding is the search for appropriate personal metaphors that make sense of our lives. Self-understanding requires unending negotiation and renegotiation of the meaning of your experiences to yourself," and, in education, this process involves the conscious recognition of and reflection on the metaphors we teach by (Lakoff & Johnson, 1980, p. 233).

For Sfard (1998), "because metaphors bring with them certain well-defined expectations as to the possible features of target concepts, the choice of a metaphor is a highly consequential decision. Different metaphors may lead to different ways of thinking and to different activities" (p. 5). This suggests that the metaphors that guide preservice teachers' thinking can provide a glimpse of how they intend to position themselves in the profession, including the approaches they will take to content and the kinds of student-teacher relationships they will attempt to create (Pinnegar et al, 2011).

According to Tobin (1990), "using metaphors of teaching and learning provides a focus from which to begin looking at teacher change processes. By conceptualizing teachers' beliefs and roles through the metaphors they use, and then introducing…more appropriate metaphors, teacher change can be implemented" (p. 127). For example: replacing positivist metaphors that view teaching as the passive transmission of knowledge from one individual to another with constructivist metaphors that view teaching as a more dynamic social process might better prepare preservice teachers to work with diverse populations of students.

137

8.2.1   Constructivist Pedagogy

Constructivist pedagogy supports the kind of activity-based teaching and learning that encourages students to develop their own frames of thought. Based on the work of Dewey (1938), who emphasized "[the] importance of the participation of the learner in…the learning process" (p. 67), constructivism encourages reflection and empowers students to become responsible for their own learning (Brooks & Brooks, 2001). According to O'Loughlin (1992), "emancipatory constructivism is best viewed as a reaction against the positivist doctrine that objective truth exists and that by using certain rational methods of thinking we can arrive at authoritative knowledge that can be imparted to others" (p. 336). By supporting the construction rather than the transmission of knowledge, this approach is open to the multiple perspectives and alternate worldviews that teachers are encountering more and more in our public schools.

In the present study, which aligns with Holt-Reynolds' (1992) contention that we can learn more about how teacher candidates might situate themselves in the profession by examining their beliefs, metaphor is used to provide preservice teachers with an opportunity to reflect on any discrepancies that may exist within their understanding of what it means to teach. Instead of simply identifying the metaphors that the participants brought with them into a teacher education program, however, this study also employs social cartography, the art and science of mapping ways of seeing, to map these metaphors in an intertextual field. According to Paulston (1997), social mapping "seeks to open up meanings, to uncover limits within cultural fields, and to highlight reactionary attempts to seal borders and prohibit translations" (p. 454). Rather than offering a static portrait of preservice teachers' metaphors, in other words, the map functions as a heuristic device, encouraging the participants to reflect on their beliefs.

138

8.2.2   Method

This study maps the teaching metaphors of 22 preservice teachers in a one-semester course on the social foundations of education. All of the participants were enrolled at various levels in the Bachelor of Applied Psychology degree program at a large urban university; however, excluding classroom observations, including first-year field experiences or informal daycare work, none of them reported any previous teaching experience. Twenty of the participants identified as female, two identified as male. With the exception of one Black female and one Latino male, all of the participants identified as White.

After reading Lakoff and Johnson's (1980) work, specifically their thoughts on the experientialist alternative for giving new meaning to old myths, and discussing how metaphor might help teachers construct meaning and reflect on their experiences, the participants responded to a three-part questionnaire. Part 1 solicited demographic information, while Part 2 asked the participants to provide their own metaphors for teaching and learning in the form of "Teaching is like…" and "Learning is like…" Finally, in Part 3, the participants justified their responses to Part 2 by writing personal narratives. These narratives were used to help the researcher situate the preservice teachers' perceptions on the map, especially when two or more teachers adopted the same metaphors.

Critical discourse analysis, which views language as a form of social practice, was used to construct knowledge communities from the preservice teachers' metaphors and personal narratives (Fairclough, 2010; Fairclough & Wodak, 1997; Foucault, 1972; Spradley, 1980). Then, using social cartography, these communities were mapped in an intertextual field whereby the participants were encouraged to reflect on the results (Paulston & Liebman, 1994).

In order to construct the knowledge communities, the participants' metaphors were examined in the context of cultural transmission. According to Sfard (1998), "one glance at the current discourse on learning should be enough to realize that nowadays educational research is caught between two metaphors…the *acquisition metaphor* and the *participation metaphor*" (p. 5). The acquisition metaphor, on the one hand, suggests that knowledge is acquired through individual experience and gradually refined into more and more complex cognitive structures. Participant responses that were categorized as acquisition metaphors include, "Teaching is like tuning a violin" and "Learning is like building a bridge." The participation metaphor, on the other hand, suggests that knowledge is the consequence of participating in authentic learning communities. Participant responses that were categorized as participation metaphors include, "Teaching is like being a tour guide" and "Learning is like being on a team." In all cases, the participants' metaphors were compared to their personal narratives for clarification.

Next, the participants' personal narratives were examined in the context of positivist and constructivist epistemologies. For Guba (1990), "the constructivist chooses to take a *subjectivist* position. Subjectivity is not only forced on us by the human condition…but because it is the only means of unlocking the constructions held by individuals" (p. 26). Excerpts from participant narratives that were categorized as constructivist include, "It is important for teachers to construct democratic learning environments" and "Teachers should be open to diverse perspectives." Alternately, "the positivist is constrained to practice an *objectivist* position… that permits the inquirer to wrest nature's secrets without altering them in any way" (p. 19). Excerpts from participant narratives that were categorized as positivist include, "It is the teacher's responsibility to make sure that their students are prepared to take standardized tests" and "Students learn by soaking up information from their teachers."

8.2.3   Results

Critical discourse analysis revealed the five knowledge communities that appear on the map (see Figure 26). They are labeled according to size, from largest to smallest, and represent the overarching metaphors that emerged from the participants' responses to Parts 2 and 3 of the questionnaire. The largest knowledge community, on the one hand, includes metaphors pertaining to growth, such as "Teaching is like tending a garden" and "Learning is like mapping new worlds." These metaphors position teachers as partners in learning who encourage their students to improve by building on their own experiences. The second largest knowledge community, on the other hand, includes metaphors pertaining to production, such as "Teaching is like working in a factory" and "Learning is like fitting into place." These metaphors view teachers as content experts who are solely responsible for the transmission of information.

The third largest knowledge community includes metaphors pertaining to travel, such as "Teaching is like going on a journey" and "Learning is like collecting postcards." In much the same way as the growth metaphors in the largest knowledge community are closely aligned with constructivist epistemologies, the metaphors in this group also envision teachers in partnership with their students. The fourth largest knowledge community includes metaphors pertaining to maintenance, such as "Teaching is like pruning a hedge" and "Learning is like working out." These metaphors lean more toward positivist epistemologies, offering a more objective view of knowledge acquisition. Finally, the fifth largest knowledge community, albeit the smallest, includes metaphors pertaining to guidance, such as "Teaching is like being a tour guide" and "Learning is like going on a hike." These metaphors, while still essentially positivist, begin to move toward an acceptance of more constructivist worldviews.

141

Figure 26. Mapping Preservice Teachers' Metaphors of Teaching (Rr)
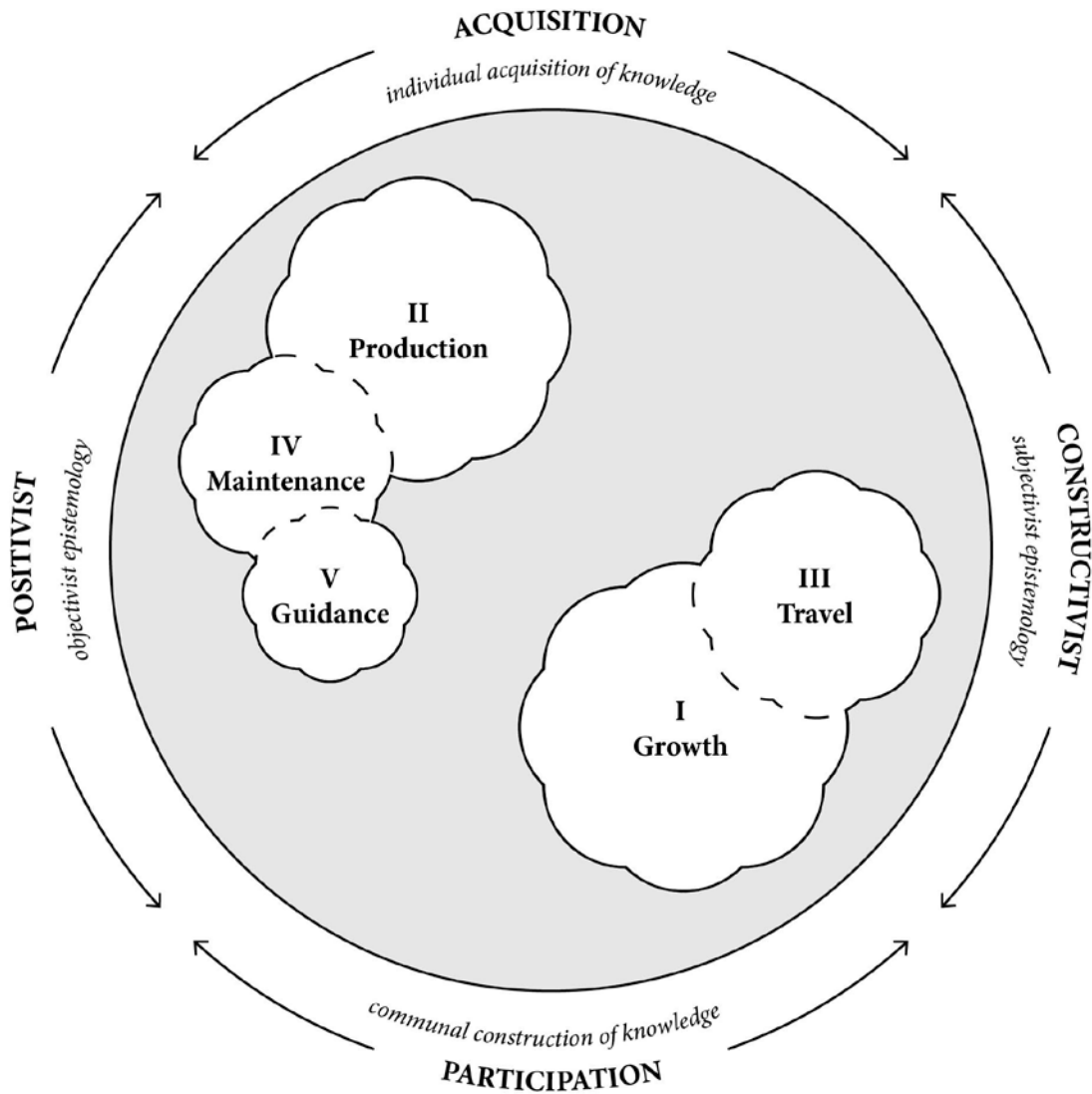
Issue or Debate	preservice teachers' metaphors of teaching	
Range of Texts	the teaching metaphors of 22 preservice teachers in a one-semester course on the social foundations of education	
Range of Positions	positivist worldviews constructivist worldviews	participation metaphors acquisition metaphors
Knowledge Communities	growth, guidance, maintenance, production, travel	

8.2.4 Discussion

The map suggests that the preservice teachers involved with the present study were almost evenly split between positivist and constructivist epistemologies, between objectivist and constructivist worldviews. While this does not imply that the beliefs of all preservice teachers can be so neatly categorized, it does provide a starting point for discussing how teachers' unconscious beliefs about teaching and learning can manifest in their practices. If the atmosphere in a particular classroom, as Martínez, Sauleda and Huber (2001) suggest, can be traced to the teacher's preferred educational metaphor, then it can be assumed that the atmosphere in the participants' future classrooms would be significantly different. A preservice teacher who favors the growth metaphor, for example, might be more open to collaborative teaching strategies, encouraging students to make sense of learning in the context of their own experiences, whereas a preservice teacher who favors the production metaphor might be more likely to exercise control, preferring didactic as opposed to dialogic methods of instruction.

The map also suggests that the preservice teachers who favored an objectivist approach to teaching were more likely to accept the acquisition metaphor of student learning. Similarly, the preservice teachers who favored a subjectivist approach were more likely to accept the participation metaphor. There was very little overlap, although some of the preservice teachers, especially those who viewed teaching as guiding, seemed to be accepting, or at least aware, of alternate perspectives prior to viewing the map. According to Sfard (1998), the acquisition metaphor's emphasis on viewing knowledge as intellectual property has the capacity to promote rivalry rather than collaboration. The participation metaphor, however, can bring people together through its promise of a more democratic process of teaching and learning.

143

In addition to exploring the knowledge communities, the overlaps and disconnects, the participants also considered the white space, the gray area in which none of their metaphors were mapped. The most obvious gaps, or *silences*, occurred at the intersection of participation metaphors and positivist epistemologies, and at the intersection of acquisition metaphors and constructivist epistemologies. While this is not surprising, given the position of the knowledge communities at the opposite poles, it does provide an opportunity to think about the metaphors that preservice teachers possess in a different way. According to Star (1991), "finding the silent blueprint to a life means looking in areas of darkness" (p. 266). Extended to teacher education, this suggests that we can learn just as much from the metaphors that preservice teachers do not possess as we can from those that they do.

After the participants spent some time with the map, challenging the placement of their own ideological positions, they began to think about which metaphors might help them navigate our current crisis of difference by attempting to correlate their current beliefs to their future practices. One of the students who expressed a production metaphor of teaching, for example, was particularly troubled when she tried to imagine how her current line of thinking would emerge in her future classroom. "It makes me think of the old *Calvin and Hobbes* comic," she said, "the one where Calvin imagines school as a factory where the kids are filled with goo and driven like cattle from one place to the next. Even though I've always seen my teachers as 'pitches of knowledge,' it wasn't until we started talking about the map that I realized how this could actually affect the ways I work with students." Similarly, one of the students who expressed a growth metaphor of teaching came to this realization: "By thinking of my students as flowers, which are all beautiful, I can start to appreciate their differences while looking forward to the challenge of figuring out just how much each of them needs watered."

144

Even though it might be easier for teachers to work with students from similar cultural or economic backgrounds, it is possible for all teachers to engage all of their students if they are willing acknowledge that people are capable of constructing knowledge in different ways. According to McAllister and Irvine (2000), teachers who accept and display multifocal worldviews are more likely to create productive learning environments that motivate their students, and, one of the ways that preservice teachers can work toward an acceptance of multiple perspectives is by examining and reflecting on their beliefs. By replacing acquisition metaphors of teaching and learning, which view students as containers to be filled, with participation metaphors, which view students as active participants in their own education, preservice teachers can start to address their own latent assumptions about teaching and learning before ever stepping foot in a classroom.

8.2.5   Limitations and Recommendations for Future Research

Even though the use of metaphor in teacher education discourse can help preservice teachers uncover some of their latent beliefs about teaching and learning, it is not without its drawbacks. Thompson and Campbell (2003), for example, identify three problems with metaphor analysis: the narrow focus on self, the potential for superficial responses, and the inherent limitation of using metaphor to express complex ideas. The narrow focus on self is problematic because it diminishes the importance of context, suggesting that a single metaphor is somehow capable of expressing all of a preservice teacher's beliefs. The potential for superficial responses is also of concern because preservice teachers who do not take metaphor analysis seriously might compromise the complexity of the study. Finally, the inherent limitation of using metaphor to

express complex ideas is potentially troublesome because, once again, it supports the compression of large ideas into smaller ones.

Social cartography, as a method for helping preservice teachers acknowledge and visualize difference, also has its share of limitations. For critics, the absence of objectivity and generalizability make social maps too context dependent (Torres, 1996). Another complaint is that a lack of "hard data" reduces social cartography to little more than an exercise in "intellectual gymnastics" (Watson, 1998, p. 108). For social cartographers, however, it is this very lack of objectivity and generalizability that make social maps so important: "A map…is a construct, a unique object. Initially, each map, as is true of any written discourse, is the property of its creator—it contains some part of that person's knowledge and understanding of the social system" (Paulston & Liebman, 1994, p. 223).

Future research on preservice teachers' metaphors of teaching and learning should focus on exploring the actual extent to which metaphor is capable of helping them reflect on their beliefs. According to Mahlios and Maxson (1998), "there are observed instances in which root metaphors change [or hold] as students become teachers…What is not known at this point is how teachers actually enact the practices of teaching that grow out of their initial metaphor/cognitive systems" (p. 239). One of the ways that researchers can begin to address this gap in the literature is by conducting more longitudinal studies that explore teachers' metaphors from the moment they enter a teacher education program through their first several years of practice, perhaps even longer. By examining how these structures may develop and change over time, teacher educators would be in a better position to provide preservice teachers with a metaphorical profile, which, in turn, could be used to help them reflect on any disconnects that may exist between their future practices and current beliefs.

146

8.3   MAPPING INTERCULTURAL COMPETENCIES

As student populations become increasingly diverse, it is important for teacher preparation programs to focus on the development of intercultural competencies (U.S. Department of Education, 2014). Defined here as a set of cognitive and behavioral abilities that enable individuals to responsibly navigate cross-cultural environments, intercultural competencies are significant not only because they encourage a fair and meaningful engagement with other cultures, but also because they promote a critical self-cultural awareness as well (UNESCO, 2013). According to Hitchcock, Quan, and Dahn (2010), "even the seemingly simple concepts of time and space can differ considerably according to one's deep cultural assumptions, thereby affecting the teacher's and student's viewpoints and must be given consideration in an interculturally competent manner" (p. 86).

As the locus for cultural transmission, teacher preparation programs are multifaceted in their approach to preparing preservice teachers for careers in education. In addition to providing preservice teachers with opportunities to immerse themselves in the literature regarding effective methods of teaching and learning and creating spaces for them to discuss and reflect on what they learned, many teacher preparation programs also design field experiences that allow preservice teachers to work alongside expert teachers in serving diverse populations of students. In many cases, these situations expose preservice teachers to practices that may challenge their understanding of their own experiences as students (Scherff & Singer, 2012).

These experiences, which can occur concurrently or detached from methods courses, often consist of observing and documenting classroom teaching in authentic, off-campus environments, as well as of reflecting on these experiences in a classroom setting, thus providing preservice teachers with a vocational familiarity with their chosen profession long before they themselves are required to enter the workforce (Bullough, 2005).

The potential of early field experiences to help preservice teachers bridge the gap between theory and practice is well-documented (Darling-Hammond, Cheung, & Frelow, 2002; Smagorinsky, Sanford, & Konopak, 2006). According to Anderson and Maninger (2007), for example, most preservice teachers credit their supervising teachers as being the most powerful determiner of their instructional practices. Similarly, Musset (2010) found that because of the aforementioned link teacher preparation programs are putting more of an emphasis on field experiences, especially considering that the literature suggests that methods courses offered in tandem with field experiences are more effective than those offered without (Linek, 1999). Because field experiences are one of the most impressionable periods of teacher preparation—in some cases, these early forays into the classroom are the first time that preservice teachers are permitted to take on the mantle of a classroom educator—they are also prime sites for transformative learning, a process which can facilitate the development of the intercultural competencies needed to engage with diverse populations of students.

8.3.1   An Overview of Transformative Learning Theory

Transformative learning, which requires a critical examination of one's own values and beliefs, occurs through the conscious displacement of limited or apathetic worldviews (Cranton, 2006; Kroth & Cranton, 2014; Mezirow, 2000). This can be challenging, not only because it is difficult

to see how our assumptions may promote distorted ways of being, but also because it is more comfortable to maintain our dispositions, especially those in relation to our sense of self, than it is to change them. As an iterative process, transformative learning can be facilitated by educators who understand the spiral-like progression of reflection and revision (Cranton, 2000). It is impossible, after all, to reflect on beliefs that we are unaware that we possess, or to revise our behaviors without a thoughtful consideration of the consequences.

For Mezirow (2000), the process of transformative learning is centered on critical self-reflection. For others, such as Dirkx (2001), intuition and imagination are situated at the core of transformation. In either case, "transformative learning [generally] occurs when a person encounters a perspective that is at odds with his or her current perspective. This discrepant perspective can be ignored, or it can lead to an examination of previously held beliefs, values and assumptions" (Kroth & Cranton, 2014, p. 3). Even though it may have social consequences, especially in the case of teachers opening themselves to diverse perspectives, the process of transformative learning is an individual endeavor, meaning that change has to happen within before it can be shared with the larger populace.

This line of thinking is closely aligned with constructivist theory, which grew out of phenomenology and hermeneutics. According to Mertens (2009), "the basic assumptions guiding the constructivist paradigm are that knowledge is socially constructed by people active in the research process, and that researchers should attempt to understand the complex world of lived experience from the point of view of the people who live it" (p. 16). Even though this approach establishes an interactive link between the researcher and the researched, it is important to remember that research is ultimately a product of the values of the researcher.

While there are no particular methods for initiating transformative learning—an informal conversation, for example, is just as likely to encourage reflection as a structured lesson—Cranton (2002) offers some strategies for stimulating substantive change, including creating an activating event, promoting an openness to alternatives, and engaging in the kind of discourse necessary to revise any erroneous assumptions. In the present study, the first-year field experience for five undergraduate students enrolled in a course on the social foundations of education is framed as the activating event for developing intercultural competencies.

8.3.2 Method

Although many studies have examined preservice teachers' field experiences in relation to the transformative potential of their beliefs, there is a gap in the literature concerning the use of a cartographic discourse to illustrate the development of intercultural competencies (Kroth & Cranton, 2014). According to Ruitenberg (2007), "cartographic discourse is a valuable tool for educational theory and research. It can aid educational scholars in examining the spatial aspects of educational experience to which narrative discourse, so predominant in education, may not pay much attention" (p. 22). It is important to note that a cartographic discourse is meant to be used in conjunction with traditional written discourses, not as a replacement. The underlying purpose for using maps is to make invisible things, such as preservice teachers' perceptions, competencies, and dispositions, visible for study. In particular, this study makes use of social cartography, the reading and writing of social maps, to help the participants reflect on and make sense of their experiences.

Social cartography, the postmodern offspring of cognitive mapping and geographical cartography, emerged from comparative education discourse in order to help researchers make

sense of the increasingly diverse and fragmented nature of their field (Paulston, 1993).

According to Paulston (1996), who introduced social maps as a way for educational scholars to

enhance the presentation of their findings, "in the process of mapping meaning, the subject is

seen to be mobile and constituted in the shifting space where multiple and competing discourses

intersect…Social mapping, in this view, makes possible a way of understanding how sliding

identities are created" (p. xxi). This notion of sliding identities is especially salient in the present

case because it addresses the potential of transformative learning to help preservice teachers

develop intercultural competencies.

8.3.3   Situating the Researcher/Researched in Context

Five preservice teachers, four females and one male, from a large urban university participated in

this study. All of them were enrolled in a course on the social foundations of education during

their first year in the education program. The social foundations course was not itself attached to

a field experience; however, all of the participants were concurrently enrolled in a methods

course that placed them in the field for the first time. It is important to note that while all of the

participants identified as White, the majority of the students in their classrooms were not.

Prior to their 10-week field experience, the preservice teachers took the Cultural

Diversity Awareness Inventory (Henry, 1991), a self-administered questionnaire that was

"designed to measure an individual's attitudes, beliefs, and behaviors towards children of

culturally diverse backgrounds" (Larke, 1990, p. 24). After self-reflecting on the results, the

participants used the Intercultural Knowledge and Competence Value Rubric (AACU, 2015) to

further refine their own understanding of their beliefs, specifically in the context of knowledge,

including cultural self-awareness and a knowledge of cultural worldview frameworks, and skills, such as empathy and verbal and nonverbal communication.

Once they had a vocabulary for reflecting on their intercultural competencies, the participants then mapped these competencies in an intertextual field meant to help them visualize their beliefs in context. In addition to an individual map of their own beliefs, the group also convened to make a map of their combined beliefs, which prompted an interesting conversation in terms of how they decided to map their beliefs in relation to each other.

Because the purpose of this study was to help the preservice teachers use social maps to develop their intercultural competencies, a decidedly individual experience, the researcher did not participate in the mapping process, except to answer questions of a practical or aesthetic nature. After each mapping session, which served as the activating event for transformative learning, the researcher facilitated the ensuing conversation by promoting an openness to alternative perspectives and offering suggestions for how the preservice teachers might revise any of their potentially harmful assumptions (Cranton, 2002).

Although the researcher was responsible for creating the map's boundaries, a necessary step for ensuring that the participants were working within the frame of intercultural competencies as defined by the literature, the researcher did not attempt to influence the preservice teachers' decision of placement in any conscious way, other than to make suggestions when the conversation seemed to be tapering off or the preservice teachers were unaware of alternatives to the perspectives under discussion. When the participants found themselves discussing the difference between positivist and constructivist epistemologies but were unable to name them as such, for example, the researcher provided them with the vocabulary and gave a description of their principles from the literature.
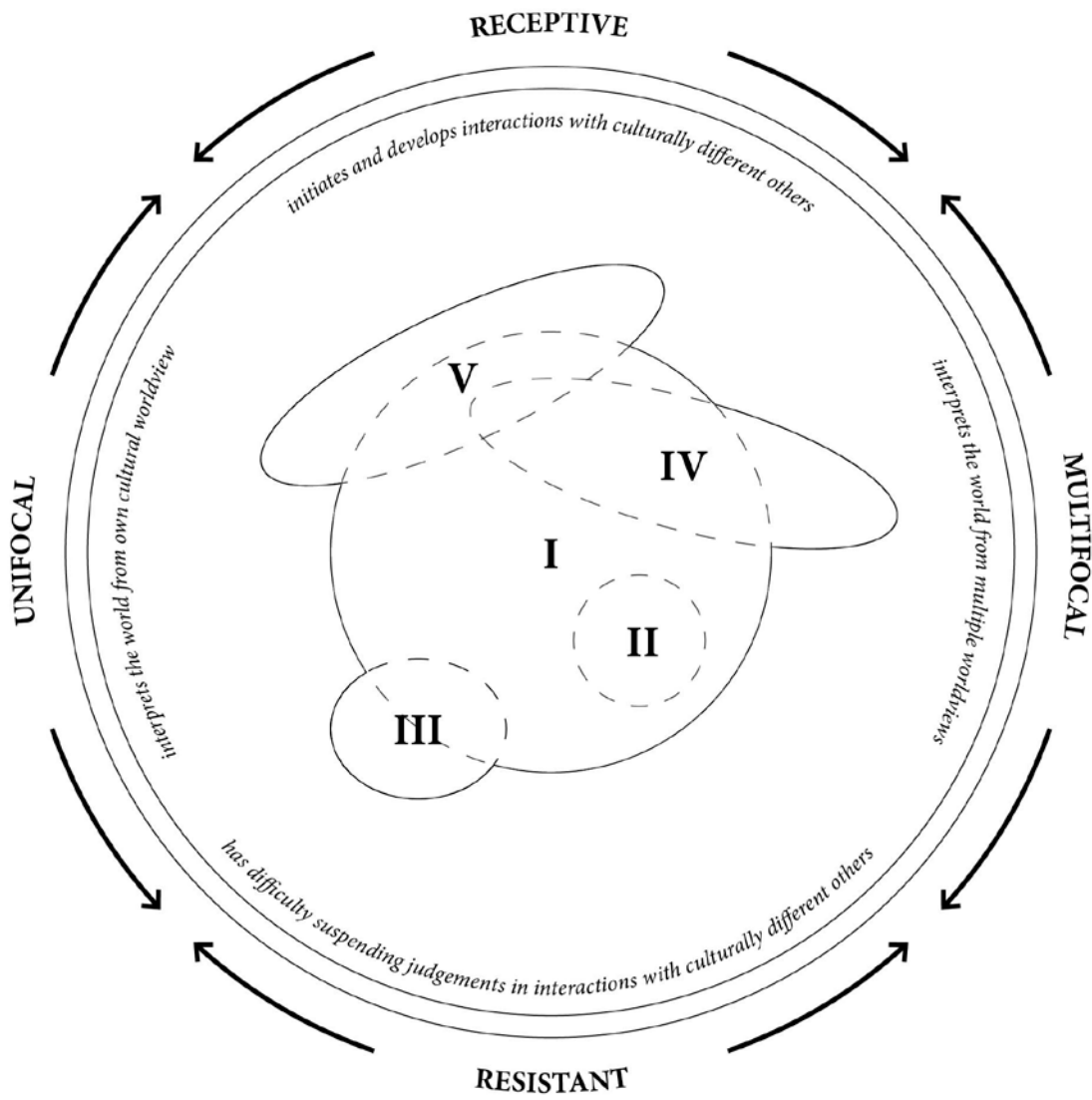
8.3.4 Deconstructing the Map

The map of the participants' intercultural competencies is composed of three layers. In the outermost layer, space is arranged along the horizontal axis from unifocal worldviews on the left to multifocal worldviews on the right, and along the vertical axis from resistant relationships on the bottom to receptive relationships on the top. In the middle layer, the axes are separated from the intertextual field by a permeable membrane meant to suggest the potential for expansion. And, in the innermost layer, the participants' perceptions of their intercultural competencies are engaged in an intertextual field that suggests their relationships not only to the axes but also to each other as well. It is important to note that the addition of additional perspectives would alter the positioning of all other claimants on the map (see Figures 27 and 28).

The researcher selected the map's boundaries to loosely correspond with the Cultural Diversity Awareness Inventory and the Intercultural Knowledge and Competence Value Rubric. Even though both the Inventory and the Rubric required the participants to quantify their competencies—the Rubric, for example, asked them to rate their knowledge of cultural worldview frameworks on a scale of one to four—the map does not hold them to such rigid standards. They are free, in other words, to map their competencies at the intervals of their own choosing. In order to determine their horizontal position on the map, the participants were asked to consider their skills in relation to empathy and their ability to pick up on and use verbal and nonverbal communication skills across cultural contexts. Their empathy judgment included their perceptions of how well they were able to recognize the intellectual and emotional dimensions of more than one worldview, while their communication judgment included how well they were able to negotiate a shared understanding based on differences.

153

In order to determine their vertical position on the map, the participants were asked to consider their knowledge in relation to cultural self-awareness and their understanding of cultural worldview frameworks. Their cultural self-awareness knowledge was based on their ability to articulate insight into their own cultural rules and biases, and their knowledge of other cultural worldview frameworks was based on their ability to demonstrate an understanding of the complexity of elements important to members of other cultures in relation to their values, assumptions, and beliefs.

Although the participants were not given specific instructions as to how to represent their competencies on the map, they collectively choose to represent them as circles or ellipses with dotted borders to suggest the potential for change and overlap. It is important to note that while the participants arrived at the discussion with a map of their own, they did not simply reproduce their own perceptions on the map; rather, they discussed the results of their self-assessment and talked about how they came to represent their intercultural competencies in the way they did. At the end of the conversation, having considered their own responses in the context of those of their peers, they revised their own maps and then created a single map that featured all of their perspectives in the same intertextual field.

In general, competencies that appeared on the right side of the map were considered to reflect multifocal worldviews while those on the left reflected unifocal worldviews. Similarly, competencies that appeared on the top of the map were considered to reflect more receptive attitudes toward other cultures while those on the bottom reflected more resistant attitudes. It is important to note that while perspectives trending toward the upper right demonstrate a higher level of intercultural competence than those trending toward the bottom left, the purpose of the map was to help the participants visualize their beliefs, not criticize them.

Diagram labels:

RECEPTIVE

initiates and develops interactions with culturally different others

interprets the world from own cultural worldview

UNIFOCAL

interprets the world from multiple worldviews

MULTIFOCAL

V

IV

I

II

III

has difficulty suspending judgements in interactions with culturally different others

RESISTANT

Issue or Debate	preservice teachers' cultural diversity awareness (pre-field experience)	
Range of Texts	five preservice teachers, four females and one male, from a large urban university participated in this study	
Range of Positions	unifocal worldviews multifocal worldviews	resistant perspectives receptive perspectives
Knowledge Communities	N/A	

Figure 27. Mapping Preservice Teachers' Cultural Diversity Awareness: #1 (Rp)

155

RECEPTIVE

initiates and develops interactions with culturally different others

interprets the world from own cultural worldview

UNIFOCAL

V

III

IV

I

II

interprets the world from multiple worldviews

MULTIFOCAL

has difficulty suspending judgements in interactions with culturally different others

RESISTANT
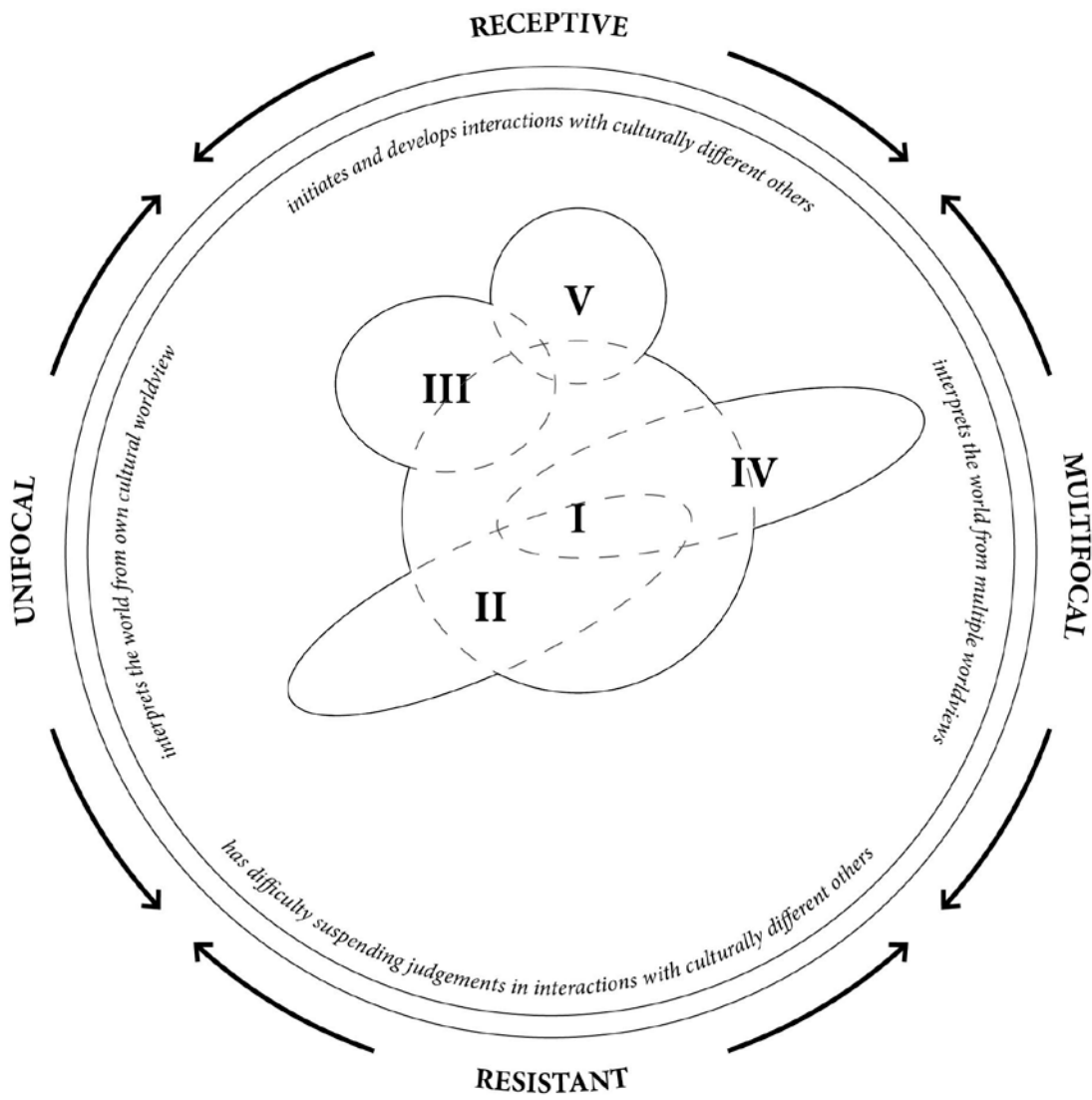
Issue or Debate	preservice teachers' cultural diversity awareness (post-field experience)	
Range of Texts	five preservice teachers, four females and one male, from a large urban university participated in this study	
Range of Positions	unifocal worldviews multifocal worldviews	resistant perspectives receptive perspectives
Knowledge Communities	N/A	

Figure 28. Mapping Preservice Teachers' Cultural Diversity Awareness: #2 (Rp)

156

8.3.5 Results

The participants' first map, created prior to their 10-week field experience, offers a unique look at not only how each person viewed themselves in relation to intercultural competencies, but also how the group saw themselves in relation to each other (see Figure 27). At first, it seems like the group has situated itself at the center of the map; however, a closer look reveals the overlaps and disconnects between its individual members. Even though the members had plotted themselves on their individual maps in different ways—for example, one of the participants used a cloud-shaped while another used the kind of point one might find in a Cartesian plane—the agreed to use circles and ellipses to indicate a range of possible perspectives on their collaborative map.

At the center of the map, Subject 1 illustrated his intercultural competence as a large circle that acknowledged each of the poles simultaneously. In his disposition journal, he wrote, "I'm not comfortable, at this point in the semester, with placing myself on any one side of the map. Even though this may seem like a cop out, I see myself as decidedly average when it comes to how I'm able to engage with people from different cultures. I understand that my worldview is not the only worldview, but I don't know enough about other cultures to consider myself 'competent.' I also consider myself open to learning about other cultures, but, then again, just because I'm open to something doesn't mean that I agree with it."

Subject 2 chose to illustrate her intercultural competence as a much smaller circle slightly more toward the right of the map. In her disposition journal, she wrote, "I think I have a solid grasp of other people's cultures, at least the one's I've studied in school, but I'm not the most open person. I'm willing to give people the benefit of the doubt, but I'm not willing to accept something like poor behavior just because someone's culture says that it's okay."

Subject 3, the first participant to use an ellipse rather than a circle to illustrate her intercultural competence, placed her perceptions toward the lower left side of the map. In her disposition journal, she wrote, "I have had very few opportunities, in school or otherwise, to really engage with people from different cultures. What I mean is that it was never a priority. Sure, I understand that other cultures exist and that people have different ways of viewing the world, but that doesn't mean that we always have to accept someone else's way of looking at things. In fact, I'm not even sure that I am capable of doing so."

Subject 4 chose to represent her intercultural competence with an ellipse, stretching from the middle of the map toward the far right side. In her disposition journal, she wrote, "I was fortunate enough to spend a significant portion of my childhood living abroad. My dad was in the military, so we had to move around a lot, and I like to say that I grew up in Norway and South Africa as much as anyplace else. This time gave me a chance to see how lots of different people live; however, it also taught me that culture should not be used as an excuse for common human decency. Just because someone's culture allows for more boisterous behavior, for example, doesn't mean that we have to accept it."

Stretching his intercultural competence from the left side of the map in a narrow ellipsis toward the top right side of the map, Subject 5 wanted to admit his ignore of other cultures while highlighting his desire to learn more about them. In his disposition journal, he wrote, "I'm not going to lie, I don't know much about other cultures than what I've seen on TV or in the movies. I went to a predominantly white high school followed by a predominantly white college, and I'd be lying if I said I sought out opportunities to hang out with people who were different than I am. With this being said, I understand that I'll be coming into contact with people from outside of my experience, and I'm looking forward to learning as much as possible."

The participant's second map, created shortly after their 10-week field experience, offers a glimpse at how the participants saw their intercultural competencies after immersing themselves in and working with a population of students that was significantly different from their own (see Figure 28). As a group, the participants seem to have broadened their knowledge of other cultures and gained more confidence in working with people whose experiences differ from their own; however, once again, a look at the participants' individual mappings tells a more complete story of their experiences in the field.

Once again, Subject 1 decided to illustrate his intercultural competency as a circle, albeit as a smaller one. Instead of plotting his perceptions at the center of the map, this time he chose to move them more toward the top and slightly to the right. In his disposition journal, he wrote, "I feel like I'm much more receptive to other cultures after my field experience; however, I can't say that I learned that much more about them. Most of the students I worked with this semester identified as Hispanic, and while I learned a lot more about Hispanic culture, and even picked up a little bit of Spanish, I'm not comfortable saying that I actually understand their culture. I will, however, say that I am curious to learn more. Because language is such an important back of my Hispanic students identities, I'm actually considering enrolling in a Spanish course."

Subject 2 changed the shape of her perceptions from a small circle to a long ellipse that stretched from the middle of the map toward the left. In her disposition journal, she wrote, "My field experience taught me that I don't know much of anything about other cultures. At least not in the sense that I understand them. Even though I'm mapping my intercultural competencies on the left side of the map, I want to stress that I don't see this as a step backward; rather, it seems to me to be a step forward because now I realize just how much I don't know, and how much potential I have to learn more about how what other people value and believe."

Subject 3 also deviated from the original shape of her perceptions, electing to go with a tighter circle rather than an ellipse. In her disposition journal, she wrote, "My field experience really opened my eyes to other cultures, especially to the culture of the black and Hispanic students that I had the chance to work with. In fact, I've spent more time with people from other cultures in the last 10 weeks than I had in my entire life. I'm still not sure that I'm capable of looking at things from someone else's perspective, but at least at this point I'm aware that there actually are other ways of looking at the world."

Subject 4's perceptions stayed the same shape, but this time her ellipse pointed from the center toward the upper right side of the map instead of toward the middle, indicating a slight change in her understanding of other cultures. In her disposition journal, she wrote, "I think the most beneficial part of the field experience was being able to talk to some of the students one-on-one and really get to hear their stories. Even though I've always been open to multiple worldviews, the conversations that I was able to have during my time in the classroom increased my willingness to not only ask deeper questions about other cultures but also seek out the answers to those questions as well."

Instead of using an ellipse, Subject 5 decided to illustrate his post-field experience intercultural competence as a circle positioned near the top of the map to show how his beliefs have become more focused. In his disposition journal, he wrote, "The field experience was eye-opening in the sense that it really helped to dispel some of the stereotypes I learned from TV. Instead of looking at people as a whole, I was able to learn about individuals and hear their personal stories, which really helped me see the world from more than my own single worldview. I still have a long way to go, but, after the field experience, I'm actually interested in working with an urban population moving forward."

160

8.3.6 Discussion

Even though it can be difficult to assess the lasting influence of field experiences on preservice teachers' beliefs, especially in terms of their future practices, this study suggests that these experiences can be sites for transformative learning when preservice teachers are consciously trying to develop their intercultural competencies. According to Nemec (2012), change requires a purposeful disruption "accompanied by critical reflection where learners examine their abilities, beliefs, assumptions, and values in ways that change them in some significant way" (p. 478). In order for learners to actually benefit from the disruption—in the present case, the disruption of experience was the field experience in which the participants worked with people from other cultures—they must "have some motivation to learn, a sense of safety in the learner, trust in the educator or guide, and adequate time for the transformation to occur" (p. 478).

As preservice teachers entering into their first field experiences, the participants in this study were motivated to learn as much about the students they would be serving as possible, not only because their advancement in the program depended on it, but also because they all indicated an interest in challenging their own stereotypes. Considering that the social foundations course was not directly attached to their field experiences, at least in terms of assessment, the participants felt *safe* articulating their beliefs and asking questions about cultural others during discussion without feeling *dumb* or worrying about sounding *insensitive*. Throughout the semester, as the participants became more comfortable with the researcher, the depth of their questions also began to increase. The participants devoted a significant amount of time outside of class for critical reflection, meeting as a group on several occasion, including the pre- and post-field experience mapping sessions with the researcher.

The participants' first collaborative map, created just before they entered the field, suggests that the group was feeling cautiously optimistic in terms of how well they would be able to serve students from different cultures. Most of their perceptions of their intercultural competencies are clustered near the middle of the map, with few outliers indicating individual confidence or insecurity. As expected, a closer look at the participants' individual mappings revealed that even though the group seemed confident in their intercultural competencies, some of the participants were definitely more confident than others. Subject 4, for example, was very confident in her ability to work with cultural others, citing an upbringing that included living in several cultural diverse places. Subject 3, on the other hand, admitted to having almost no experience with cultural others, and the positioning of his intercultural competencies on the map indicates an anxiety about working with people who look and act different from him.

While the participants' first map is interesting insofar as it provides an opportunity for the preservice to visualize their intercultural competencies, their second map provides a clearer picture of these competencies after they have actually had an opportunity to put them into practice. It is one thing, after all, to suggest that someone is open to differences of opinion on a survey, and something else altogether to test that competency in the field. What is particularly interesting about the second map is that not all of the preservice teachers perspectives advanced toward the upper right hand side, as would be expected if they all developed stronger competencies. Rather, while two of the preservice teachers indicated that the field experience had strengthened their ability to work with cultural others, the other three suggested that the field experience, in conjunction with the mapping exercises, taught them just how much there was that they did not know or understand. Accordingly, these participants situated their intercultural competencies more toward the lower right side of the map.

In addition to introducing preservice teachers to the importance of considering how their beliefs might influence their future practice, this study also gave the participants the opportunity to visualize the spatial nature of their intercultural competencies. While inventories and rubrics are also useful for helping preservice teachers reflect on their beliefs, mapping allows for a more nuanced examination, essentially doing away with numbers in favor of interpreting the overlaps and disconnects. It is, of course, possible to argue that mapping is also governed by measurable distances, but there is a cognitive difference between comparing numerical data and reading perspectives on a social map, especially when the person who makes the map is also encouraged to examine it in the context of other maps. For this reason, social cartography is framed not as a replacement for these kinds of traditional methodologies, but rather as an extension that can help preservice teachers view the same results from a different perspective.

Teaching for transformation involves setting the stage and offering opportunities for change. By encouraging preservice teachers to alter their assumptions or expand their frame of reference to include multiple worldviews, educators can start to help them act on any revisions they make to their assumptions. In this study, the act of mapping intercultural competencies in the first-year field experience is framed as a disruption to the preservice teachers' nascent state of learning. By encouraging the participants to enter the field experience with the specific goal of monitoring their own engagement, their successes and failures, with cultural others, and then by providing multiple opportunities for them to critically reflect, not only as individuals but also as a part of a team of social cartographers, the researcher sought to provoke a transformative response in the participants' perceptions. While it is difficult to determine just how much influence this study will have on the preservice teachers' future practices, it does provide a first step in developing their intercultural competencies.

8.3.7 Limitations and Recommendations for Future Research

Even though social scientists have attempted to study to development of preservice teacher dispositions for decades, there is little evidence to suggest that change is actually occurring. While studies that involve actual experience, such as the first-year field experience, tend to be more successful than those that occur strictly in a classroom setting, preservice teachers are often conditioned to respond to surveys, such as the Cultural Diversity Awareness Inventory, in certain ways, often distorting their own perceptions to frame themselves in certain ways. It is, for example, difficult to imagine a preservice teacher with racist tendencies would admit the extent of these tendencies when doing so might hurt his or her grade or ability to advance in the field.

Nevertheless, an increasing number of teacher educators are attempting to enhance the intercultural competencies of preservice teachers. Some programs have added multicultural course requirements, while others have increased the number of field experiences that their students have to complete throughout. It is important to remember, however, that preservice teachers come to teacher education with almost two decades of values, assumptions, and beliefs, and that changing these deeply ingrained characteristics can be challenging, and there is almost no evidence to suggest that such programs can construct experiences that even mostly affect preservice teacher behavior. Changing behavior is a long and challenging process. Teacher educators, even those who are committed to transformative learning, are only one of many forces at work, and the responsibility cannot be thrust upon teacher educators or teacher education programs alone. The responsibility to help preservice teachers develop intercultural competencies is one that should be shared across all facets of the campus and community, reaching all the way to the macro level of society.

9.0   REVISTING THE LABYRINTH

Almost thirty years after William Least Heat-Moon went searching for meaning on the back roads of America, Edgar I. Ailor III and his son retraced his journey to document how the people and places along his route had changed. Instead of pens and battered notebooks, however, these explorers brought cameras to record their experiences, augmenting a narrative discourse with a visual one: "Our goal in revisiting [Heat-Moon's blue highways]…was to capture the images he describes: the awe-inspiring diversity and beauty of back-roads America, its colorful cafes and the thirty-five taverns, and the remarkable people he met…Time after time, a scene from the book came into focus around a bend or over a hill. We stepped off the pages of the book to recapture an experience recorded thirty years prior" (Ailor & Ailor, 2012, p. xi).

In much the same way that the Ailors' photography project was both a celebration and an extension of Heat-Moon's work in human geography, my purpose here is to celebrate and extend Rolland G. Paulston's work in social cartography. Since its inception, social cartography has been used to map everything from rural women's perspectives on nonformal educational experiences to practitioner perceptions of scientific research, from knowledge spaces and inquiry genres in comparative education discourse to the epistemological position of researchers in educational policy (Ahmed, 2003; Nicholson-Goodman & Garman, 2007; Mehta, 2009; Tello & Mainardes, 2012). It has even been applied to the prevention of fishing vessel accidents and the construction of nomadic pedagogy, representing and critiquing the spatial nature of the educational experience (Boshier, 2000; Fendler, 2013).

9.0.1 The Maps of the Future

Even though there are plenty of things we can do with images in two-dimensional space, which is still the medium of choice for scholarly publications that focus on educational research, visual researchers expect that change is imminent in terms of how we communicate. According to Lima (2011), for example, "driven by a surge in computing power and storage, increasingly open and accessible data sets, a large adoption by mainstream media and online-social-network service, and more importantly, our never-ending eagerness for measurement and quantification, visualization is currently at a tipping point" (p. 97).

When we finally *go over the edge*, there will be a need for new mediums or methods of publication that will address the community's need for information. It is impossible, for example, to include all of the perspectives on a particular debate or issue on a pen-and-paper based social map, even though this is the kind of inclusiveness that social cartography strives for. It might, however, be possible to include all known perspectives on an *interactive* social map that is constantly being updated as new perspectives are articulated (Allen, 2003).

According to Druker (2014), "the 'book' of the future will combine reading and writing, annotation and social media, text processing and analysis, data mining and mind-mapping, searching and linking, indexing and displaying, image parsing and distant reading, in a multi-modal cross-platform, inter-media environment" (p. 13). This suggests that what we call *text* will be replaced with temporary configurations of data, that what we call a *display* will take advantage of the n-dimensional space that technology has to offer. It is worth pointing out that a post-representational social cartography preempts this shift by framing maps as inscriptions in a constant state of becoming as opposed to static representations.
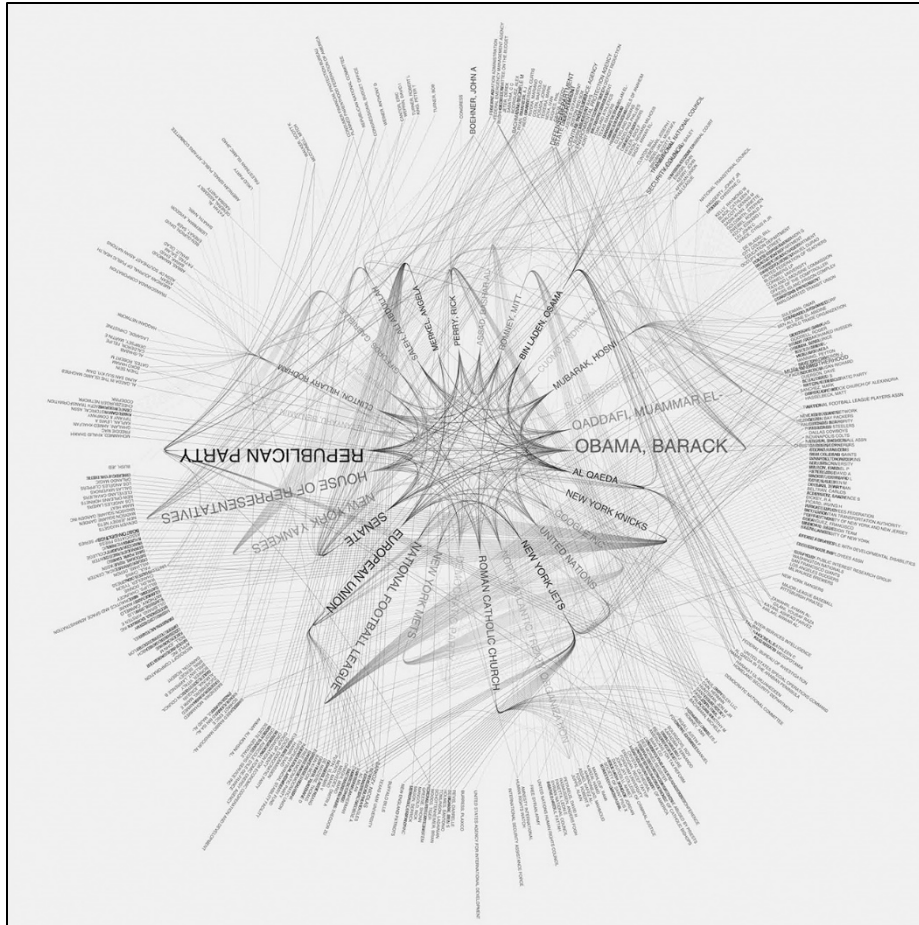
Figure 29. Network Visualization: Political relationships in the *New York Times* (Lima, 2011)

Figure 29, for example, is a network visualization that draws on the idea of infinite

interconnectedness—that is, the idea that everything is, for better or worse, connected to

everything else—to demonstrate the ties between the top organizations and personalities

mentioned in the *New York Times* during a specific time span (Lima, 2011). Even though this

particular representation is confined to an exact space and time—it is also, by mechanical or

digital reproduction, confined to this page—a similar figure in cyberspace, where there are no

conceivable limits, could exist as a living, *pulsating* thing, capable of expanding as soon as new
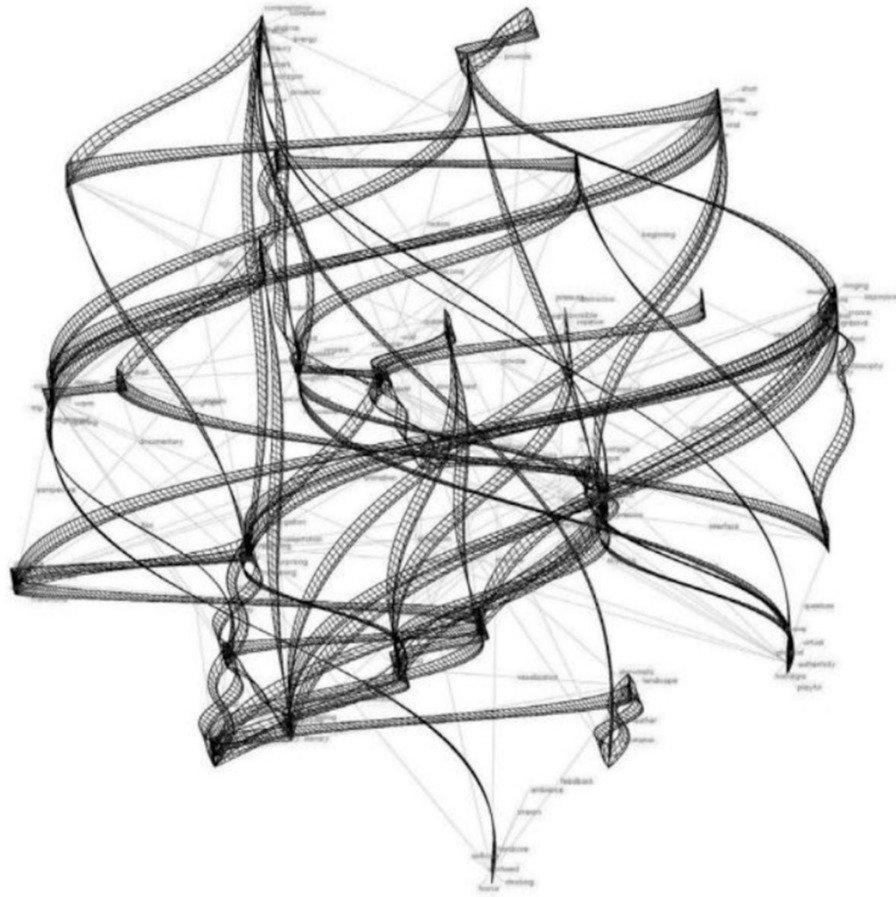
information is available.

Figure 30. Organic Rhizome: Text messages in the style of Deleuze and Guattari (Lima, 2011)

Similarly, in Figures 30 and 31, information is displayed in complex figurations that have

the capacity to expand as new information is added to the intertextual mix. In Figure 30, an

organic rhizome, text messages are displayed in relation to each other across a massive cellular

landscape that can be expanded as new customers purchase phone plans. In Figure 31,

information about epidemic analysis is displayed in a vorograph to help epidemiologists make

sense of the "complex information about the incidence and spread of disease, in relation to

population density and other demographic conditions, at geographical scales ranging from global

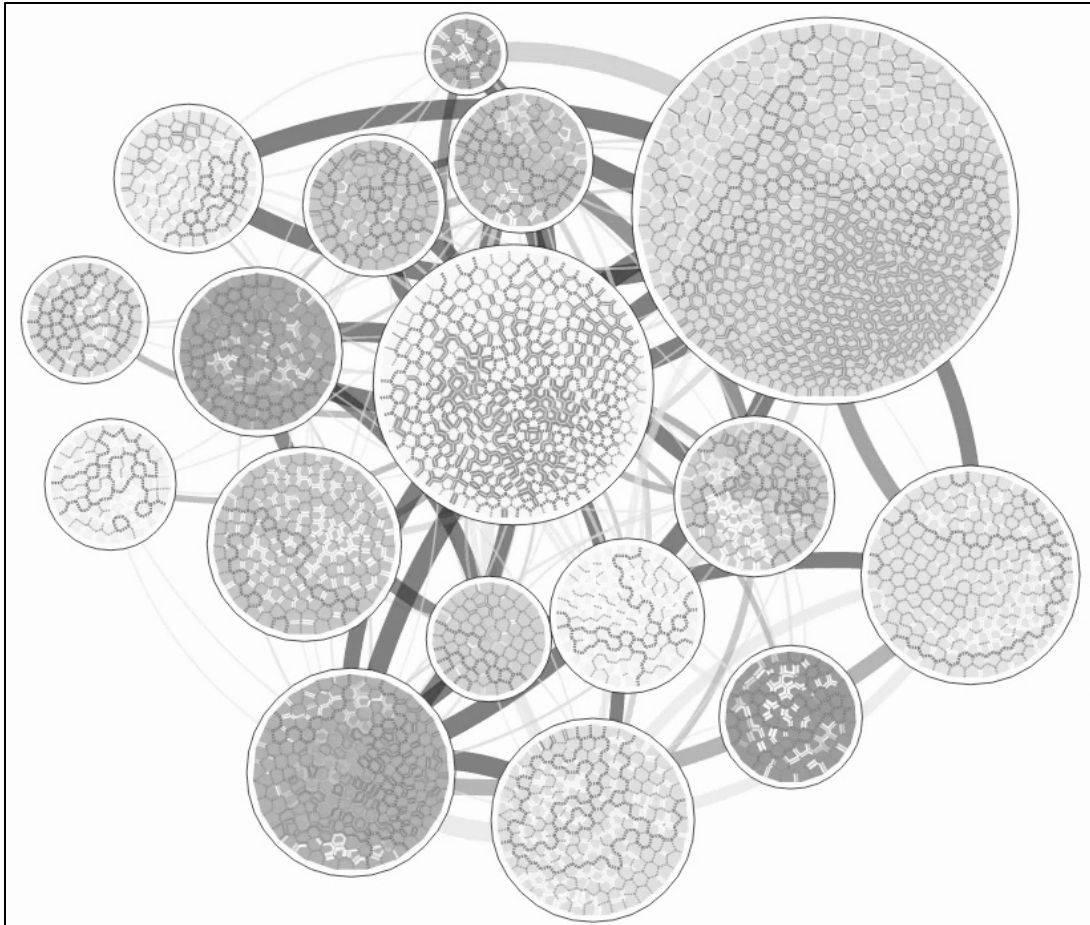air travel down to local commuting" (Lima, 2011, p. 90).

168

Figure 31. Vorograph: Epidemic analysis about the incidence and spread of disease (Lima, 2011)

This massive turn in the presentation of data, however, has not gone unanticipated. In the envoi to *Social Cartography*, for example, Paulston (1996) referenced Deleuze and Guattari's (1987) call for *nomad* mapping, which they describe as "open and connectable in all of its dimension; it is detachable, reversible, susceptible to constant modification. It can be torn, revered, adapted to any kind of mounting, reworked by an individual, group or social formation. It can be drawn on a wall, conceived as a work of art, constructed as a political action or as a meditation" (p. 13). Elsewhere, Lima (2011) suggests that "this drastic growth symbolizes a new age of exploration, with the charting of innumerous undiscovered territories" (p. 97).

9.0.2 An Invitation to Post-representational Social Cartography

Information can be represented in complex and beautiful ways. From arc diagrams to centralized bursts, elliptical implosions to organic rhizomes, technology provides us with a seemingly infinite amount of opportunities to visualize the world around us. Fortunately, in spite of its ability to diverge and reposition itself, to fragment and just as quickly coalesce, information can also be harnessed in ways that make it more accessible.

As an interpretive mode of inquiry, post-representational social cartography can help educators visualize the nuances of their classrooms. Properly examined, these nuances, including students' latent assumptions and beliefs about their relationship to the cultural surround, can translate into learning opportunities that transform how students interact with the people around them. Without the acceptance of a visual discourse, however, it would be much more difficult, and perhaps even impossible, to tease out some of the ideological intricacies that make up the core of our lived experience (Nicholson-Goodman, 2012).

Comparatively speaking, mapping provides researchers with opportunities to reveal stories that have been excluded from the discourse. According to Liebman (1996), "these hidden narratives await not discovery, [which would suggest a kind of colonial benevolence,] but a recognition that places them on the map, that seems to make them 'spring up' and take their place among the developing, moving and growing [perspectives] already placed within the social map's parameters" (p. 210). While this kind of recognition is limited to the cartographer's own knowledge and experiences—it is impossible, after all, to include perspectives that the cartographer did not know existed—the cartographer's willingness to revise the map based on new information is part of what makes social cartography so important for educational research.

In their invitation to a postmodern reflection, Paulston and Liebman (1994) "demonstrated…how social research may move one step further as it struggles to distance itself from the positivistic restraints of modernism through the employment of a 'social cartography' [that]…has the potential to be a useful discourse style for demonstrating the attributes and capacities, as well as the development and perceptions, of people and cultures operating within the social milieu" (p. 232). Furthermore, they argued that social maps could help comparative educators enhance the presentation of their findings while expressing sensitivity for those who had been disenfranchised by modernism.

In this study, which moves beyond the comparative, I have appropriated Paulston's postmodern mapping rationale and combined it with new histories of cartography to show how social maps can help educators, especially teacher educators, reveal the spatial nature of the educational experience. By framing maps as processes as opposed to representations or social constructions, teachers can see their students as being in a constant state of becoming and guide them through the double hermeneutic process of interpreting their own interpretations, which can in turn lead to personal growth and transformation.

It is important to remember that a social map, by the very virtue of *being* a map, has the potential to reinforce power relations among its claimants. There will always be someone—as in the case of Epstein and Carroll (2011), for example—who misinterprets what the map is trying to accomplish and raises questions about the validity of mapping social relations in the first place. Rather than entrenching themselves along ideological boundaries, however, social cartographers have the responsibility of engaging their critics in the kind of reflexive discourse that allows for re-mapping and counter mapping in the hope that all parties will eventually be open to alternative ways of seeing the social and educational change.

For Mehta (2009), "it is a fearsome thing, to think of the unimaginable stories that await representation…[and] mapping the unimaginable is an uncomfortable, unpredictable thing" (p. 1203). Nevertheless, she argues that unpredictable methods of inquiry, such as social cartography, are important for expanding the boundaries of educational research. "We need to start at some point," she writes, "which will necessarily and admittedly be limited and myopic, but intensely subjective and intimate, hence invaluable" (p. 1203).

By *limited* and *myopic*, Mehta is referring to the suspicion associated with the introduction of any fledgling or alternative discourse. Change, in spite of its potential for improvement, is always met with resistance, especially from those who are more comfortable with the predictability of *established* methods of inquiry. This is not to suggest that alternative methodologies should not be subject to a rigorous vetting process by the scholarly community; however, to be totally opposed to new ways of seeing how knowledge is produced is to stop asking the kinds of questions that can help us navigate our current crisis of difference: What is the alternative? Who or what is invisible?

While social maps might not always be relevant, at least not in their current form, their postmodern underpinnings, including their *ludic tolerance* for diverse ways of seeing, will continue to aid us in our search for more egalitarian methods for representing data (Nicholson-Goodman, 1996). Even though our geographic maps will continue to change over time, a moment when every inch of our planet has been accounted for is rapidly approaching: think, Google Maps. There remains, however, unmapped territory in each of us, so there is no shortage of terrain for social cartographers to seek out and explore. People represent the most complex landscapes of all, and it is perhaps here, amidst a paralogical topography, that we might finally excavate the answers to the questions that continue to elude us.

172

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173

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