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Seeing Reality from a New Dimension

Abstract

Edwin A. Abbott's book *Flatland: A Romance of Many Dimensions* presents the world of Flatland as a utopia from which the reader can gain an enhanced perspective on their constructed reality. Because all humans are restricted by what is known, assumed, and perceived, fiction literature peels away some of these restrictions by exercising peoples' imaginations. When we think "outside the box," as we often must do to wrap our minds around fiction works, we are presented the chance to realize that our perceptions are limited by our reality, and that our realized reality is limited by our perceptions. *Flatland* encourages this by recounting the fantastical journey of A Square from his limited world of two dimensions to Spaceland. The novel stretches the imagination while also making the reader aware that what they perceive as "real" is entirely dependent upon the "dimension" (i.e., socially, culturally, and historically constructed reality) in which they are situated. When we gain new perspectives, we arrive closer to truths about our world, and truths about ourselves. To do so, we must escape our own "flatlands."

Keywords

Anthropology, utopia, ideology, dimensionality

Cover Page Footnote

This essay was originally written as part of a lengthy book report on Edwin Abbott's science fiction classic *Flatland: A Romance of Many Dimensions* for Dr. Shawn Hutchinson's Computer Mapping and Visualization course. It has been adapted as a creative essay that draws from anthropology and philosophy.

Seeing Reality from a New Dimension

Jakob Hanschu

Introduction

In this essay, I use Edwin A. Abbott's book *Flatland: A Romance of Many Dimensions* to illustrate how a fictional utopia, "a place which exists nowhere," can be used to enhance our perspective and show that we are bounded by our own perceptions, or our own "cultural imagination"—our own "dimensions," if you will.^{1,2} Because all humans are restricted by what is known, assumed, and perceived, fiction literature peels away some of these restrictions by exercising peoples' imaginations. When we think "outside the box," as we often must do to wrap our minds around fiction works, we are presented with the chance to realize that our perceptions are limited by our reality, and that our "realized" reality is limited by our "distorted mental structure."³ *Flatland* encourages this awareness, but takes the whole process much further, given that the book is entirely about perceiving things outside of one's own dimension. It stretches the imagination while also making the reader aware that what they perceive as "real" is entirely dependent upon the "dimension" (i.e., socially, culturally, and historically constructed reality) in which they are situated.

¹ Edwin A. Abbott, *Flatland: A Romance of Many Dimensions*, New Princeton Science Library Paperback Edition (Princeton: Princeton University Press, 2015).

² Paul Ricoeur, *Lectures on Ideology and Utopia*, ed. G. Taylor, (New York: Columbia University Press, 1986), 15.

³ Karl Mannheim, *Ideology and Utopia*, Routledge Paperback edition, trans. Louis Wirth and Edward Shils (London and Henley: Routledge and Kegan Paul, 1979), 87.

Fictional Utopias and Reality

If a reader approaches a text with an open mind, it can make them more conscious of their reality, sharpening what David Foster Wallace called their “simple awareness.”⁴

A fiction work increases attentiveness by presenting the reader with a world or reality that is not their own. The reader is metaphorically gaining a new experience through their reading of the text. It enables the use of imagination, which forms and impacts a reader’s mind and perspective. When a reader closes the book and “returns to the real world,” they carry with them the influences of the fiction text, which will impact the ways in which they see and interpret their own reality—making them more aware of all that is and all that is not but could be. As the famous novelist Marcel Proust wrote, “The real voyage of discovery consists not in seeking new lands but seeing with new eyes.”⁵ Similarly, fictional utopias provide the “ability to conceive of an empty place from which to look at ourselves.”⁶

In his *Lectures on Ideology and Utopia*, philosopher Paul Ricoeur combines these two ideas—ideology and utopia—which are usually treated separately in a “single conceptual framework.”⁷ He attempts to illustrate that while these two ideas are often found in contrast, they are actually dual parts of what he terms the “cultural *imagination*.”⁸ In a similar manner, Karl Mannheim wrote that both ideologies and utopias create “realities” that are “distorted and concealed.”⁹ These “deviant attitudes of reality” that compose the “cultural imagination” can readily be broadened through the reading of fiction and nonfiction literature, which takes an individual to forms of utopias, where they can recognize their ideologies for what they are, where

⁴ David Foster Wallace, *This is Water: Some Thoughts, Delivered on a Significant Occasion, about Living a Compassionate Life*, (New York: Little, Brown and Company: 2009).

⁵ Marcel Proust, *In Search of Lost Time, Volume V: The Prisoner* (London: Penguin Books, 2003).

⁶ Ricoeur, *Lectures on Ideology*, 15.

⁷ *Ibid.*, 1

⁸ *Ibid.*, 1 (emphasis original)

⁹ Mannheim, *Ideology and Utopia*, 87.

they can “see their own seeing.” Ricoeur states that our reality is not at all *real* reality, but a reality conjured by our cultural imagination, impacted by the ideologies at play.¹⁰ Our cultural imaginations explain why the same object can appear differently, “according to the set of concepts with which we view it.”¹¹ This proposition gets at the constructivist idea of realities as being culturally or socially built, rather than “real.”¹² However, this theoretical orientation also raises some interesting metaphysical questions that will not be discussed here.

Ricoeur defines a utopia as “the place which exists nowhere . . . the place that exists in no real place.”¹³ Similarly, Foucault states that utopias are “sites with no real place.”¹⁴ Utopias exist to “expose the gap between the authority’s claims for and the citizenry’s beliefs in any system of legitimacy.”¹⁵ They allow for the mistrust of a certain perceived world or set of constitutive sociocultural relations.¹⁶ Thinking ourselves into the “nowhere” of utopias “puts the cultural system at a distance; we see our cultural system from the outside precisely thanks to this nowhere.”¹⁷

Flatland Discussion

Abbott’s *Flatland: A Romance of Many Dimensions* was first published over 130 years ago, in 1884.¹⁸ The book is written as a memoir of A Square, an inhabitant of a two-dimensional world called “Flatland,” and is broken into two main parts. The first part of the book is focused on

¹⁰ Ricoeur, *Lectures on Ideology*.

¹¹ Mannheim, *Ideology and Utopia*, 91-92.

¹² A position with which philosophers of the new materialist school of philosophy may sharply disagree. See Manuel Delanda, *Assemblage Theory*, (Edinburgh: Edinburgh University Press, 2016).

¹³ Ricoeur, *Lectures on Ideology*, 15.

¹⁴ Michel Foucault, “Of Other Spaces,” *Diacritics* 16, no. 1 (1986): 24.

¹⁵ George H. Taylor, “Editor’s Introduction,” in *Lectures on Ideology and Utopia*, Paul Ricoeur, ed. George H. Taylor (New York: Columbia University Press, 1986), xxii.

¹⁶ Foucault, “Other Spaces.”

¹⁷ Ricoeur, *Lectures on Ideology*, 17.

¹⁸ Abbott, *Flatland*.

familiarizing the reader with Flatland, so that they may attempt to see things through the eyes of A Square. During the second part, A Square recounts his journey out of Flatland and into worlds of zero, one, and three dimensions. The book illustrates the point that sometimes, in order to see things in a new and meaningful way—to gain perspective—we must break free from the confines of our perceived reality—our dimension—the way in which A Square had to escape Flatland in order to understand three-dimensional space.

With the first sentence of the first chapter of *Flatland*, Abbott immediately transports the reader to a new world: “I call our world Flatland, not because we call it so, but to make its nature clearer to you, my happy readers, who are privileged to live in Space.”¹⁹ This statement gives the reader an impression that the story is not set in this world, but in a fictional place, Flatland, which differs from our own. Right away we are forced to rethink our reality—or, rather, to think ourselves into a *different reality*. Flatland is compared with a sheet of paper, representing the world, with the people, houses, and other objects of Flatland referred to as resembling shapes drawn on this sheet of paper.²⁰ Thus, it is clear that Flatland lacks a third dimension. It consists only of length and width; there is no such thing as height. Furthermore, not only is there no such thing as height, but the inhabitants of Flatland cannot even conceive of the existence of such a thing as height.

Since all figures in Flatland lack a third dimension, the inhabitants see each other only as lines. A Square, who narrates Flatland, understands that his audience lives in a three-dimensional world, and may not be able to grasp what it is like to live in a two-dimensional world. To aid them in imagining this reality, he tells the reader to imagine a penny sitting on a table. In a three-dimensional world the reader could see that it is a circle by looking down on it. However, as the reader lowers one’s eye, the circular shape becomes less apparent until eventually, the eye-level is

¹⁹ *Ibid.*, 3.

²⁰ *Ibid.*, 3.

equal with the top of the table, and the penny can only be discerned as a thin line. This exercise eliminates the reader's ability to view the penny from above, which in turn eliminates the third dimension—height. It illustrates how something as simple as perspective can change the way in which reality is viewed. For example, both descriptions of the penny are right—it really is a circle when viewed from above and it really is a line when viewed from table-level—but the descriptions are only right for their given perspectives.

In order to differentiate between the differently-shaped individuals of Flatland, since they all appear as lines to each other, several methods are used. The first is hearing. The voices of members of different classes of shapes (higher classes are shapes with more angles) vary in sound. Feeling is the second means employed, as feeling an individual's angle can reveal their class. Both of these means of recognition are employed only by the lower social classes of Flatland. The higher classes choose to use the "art of sight recognition," which is learned through formal training and practice, to differentiate between inhabitants.²¹ The principle behind sight recognition is that objects closer to the observer appear 'brighter' and further objects 'dimmer.' Because the figures of Flatland are all generally regular, one can discern the angle, and thence the number of sides, of another individual by assessing the rate at which the light dims as one looks away from the center of the figure. A triangle's point, for example, would appear very bright and then the brightness would rapidly fade away to dimness. A similar effect would happen with a pentagon, but the rate at which the brightness fades away would be much less. In his description of how the inhabitants of Flatland identify each other, Abbott is once again attempting to get readers to think outside their current dimension, to understand the perspective of an inhabitant of Flatland and the ways and workings of that world.

²¹ Ibid., 17.

After touring the reader through Flatland, Abbott introduces three additional places, two of which further challenge our “dimensional biases:” Pointland, the land of no dimensions; Lineland, the land of one dimension; and Spaceland, the land of three dimensions. It is in this part of the story that we begin A Square’s personal journey through dimensions other than his own. His journey begins with a dream.

In this dream, we are given A Square’s first account of a world outside of Flatland: Lineland.²² In Lineland, readers are specifically told about an interaction between A Square and the King. Because this is a land of one dimension, the inhabitants of Lineland can only see a point directly in front of them, nothing else, which seems an absurd existence to A Square. Furthermore, they cannot move past each other on their line of a world—neighbors are for life.

Upon A Square’s meeting of the King of Lineland, he begins conversing with the King, which leads to a discussion of dimensions. It is in this discussion where we are first explicitly introduced to the trapping nature of dimensionality. A Square attempts to enlighten the king by telling him about Flatland and two-dimensions. He even performs an exercise of moving out of, and then back onto, the one dimension of Lineland. However, the King becomes offended and angry, believing that A Square is trying to humiliate him with these jests about two dimensions. It is totally inconceivable to the King that anything could exist outside of Lineland—outside of everything he knows and sees. This is the first time we truly see how dimensionality limits perspective. A Square awoke from this dream the following morning.

That next night, A Square has another existence-shaking experience. A figure begins to appear to him, and we are introduced to a new and important character: the sphere. A Square begins to converse with this spherical visitor, and the stranger reveals that he is from Space, a land of

²² *Ibid.*, 53.

three dimensions. A Square is in disbelief and cannot wrap his mind around the seemingly impossible third dimension of height. The stranger eventually rises up and out of space, the portion of him visible to A Square shrinking as he moved upwards. He eventually leaves Flatland and comes back into it, similar to how A Square moved out of Lineland in order to convince the King of a second dimension. When this still does not convince A Square of the existence of the third dimension, the Sphere resorts to analogy. The Sphere uses what A Square knows of the relationships between 0, 1, and 2 dimensions to postulate the existence of the third dimension. This once again highlights the usefulness of understanding dimensionality through analogy and discerning patterns as one moves from one dimension to the next—that can eventually be extrapolated from and used to understand dimensions beyond those that are known. When one can discern the relationship between a line and a square, a similar relationship can be explored to imagine a cube. Though the Sphere's analogical tactics are impressive—and useful to the reader for understanding multiple dimensions—A Square is still in disbelief, or perhaps simply in denial. His mentality is just as limited as that of the King of Lineland. The Sphere finally chose to resort to deeds and “pulled” A Square up (along the 3rd dimension, height) and out of Flatland into Spaceland.

Once fully emerged in Spaceland, A Square finally came to believe the words of the Sphere, praising him as a higher being. A Square was able to look down on Flatland, seeing the objects of his world as shapes, rather than lines of varying brightness and dimness. A Square is then introduced to solid three-dimensional objects. At this point, A Square has come not only to believe in, but to fully appreciate the existence of the third dimension. He realizes that it is lacking in Flatland, and longs to learn more and more about Spaceland. Eventually, his mind totally free of the trappings of his dimensionality and previous perspective, A Square begins to ask the Sphere

about the possible existence of a fourth dimension. Here A Square uses analogy, remarking that if the Sphere is an infinite combination of circles, there must be a being of an even higher dimension than the Sphere, composed of an infinite number of spheres! It is here where Abbott makes two of his central points of the book: 1) that we can understand higher dimensions through analogy of known lower dimensions and 2) that there are perhaps an infinite number of dimensions in existence, but that humans are only aware of a limited number of these. The probing questions of A Square began to frustrate the Sphere, and A Square was sent back down to Flatland.

A Square's voyages to other dimensions concludes with a dream journey to Pointland, the Abyss of No Dimensions. Here he meets the King of Pointland, who is unaware of any but his own existence. The inhabitants of Pointland have no width nor length nor height. They can see and perceive nothing save themselves. The King of Pointland is in full belief that he fills all of space, because he is only aware of his infinite finitude. This completes A Square's explorations of other dimensions, making him aware of both the possibility of multitudes of unexplored dimensions, as well as the limits and trappings of his own two-dimensional world.

Upon his return to Flatland, and throughout the last few pages of the book, the reader is told of A Square's attempts to share the Gospel of Three Dimensions with others. He begins with his grandson, who originally urged A Square towards the consideration of a third dimension, but the hexagonal grandson denies the preaching of A Square, and refuses to admit that he, too once postulated the existence of a third dimension. A Square continues to share his findings, and also writes up a text outlining his story, which is represented by Flatland. Eventually, A Square is arrested as a heretic and is thrown in prison. It is with A Square in prison that the memoirs conclude, where he comes to question his experiences of Spaceland, wondering if it was only

another dream, similar to his dreams of Lineland and Pointland. He states that despite his belief, at times he feels as if as if the land of three dimensions seems almost visionary.²³

Flatland's ending message is one that resonates throughout all of modern civilization. The message is that our perspective is only one of many, and that we ought not to let our assumptions about the world limit our ability to see things in a different light. Abbott's descriptions of the inhabitants of all the dimensional lands mentioned in his book show that the figures allow their own perspectives to imprison their minds. For example, the King of Pointland was convinced that he was the only being in all of existence, that nothing else existed; the King of Lineland refused to believe that anything could exist off of his one-dimensional line; A Square had a difficult time overcoming the trappings of his own two-dimensional perspective; lastly, even the Sphere refused to admit the existence of higher dimensions—they were outside what he knew, so he thought it to be impossible for them to exist.

Conclusion

Nearly every character in the book was unwilling or unable to consider dimensions other than their own. Today many of us are similarly trapped in our own ethnocentrism, belief templates, or schools of thought. While each of these things may seem different, they are really all different forms of the same thing—mental chains. When we refuse to see things in a way different from our current viewpoint, we limit our perspective, which limits our freedom by disallowing us to think outside the prison of our mind. It is as though we are wearing many pairs of glasses, each distorting the world to a different degree. When we are able to remove one pair of glasses, we eliminate one of the distortions, gaining a clearer picture of the world. A Square finally was freed from this

²³ Ibid., 73.

imprisonment when he ventured into Spaceland. While there, he was able to see things differently, bringing him closer to the truth. He was then able to adjust his prior version of reality, and when he returned back to Flatland, he was freer than before, as he was aware of a perspective that differed from that which dominated his own world. A similar phenomenon occurs when an individual travels to a foreign country. Because the person is introduced to new and different people, places, and ways of life, they gain a new perspective on their own life and home, which they carry with them when they return back to their country of origin.

The journey of A Square from his limited world of two dimensions to Spaceland could be compared to Plato's "Allegory of the Cave." In Plato's allegory, the prisoners in the cave are shackled and cannot turn their heads.²⁴ They can only see what is in front of them. Shadows of objects are cast on the walls of the cave, and the prisoners believe these to be real objects—they cannot discern the truth because their perspective is limited. However, one prisoner escapes his shackles and exits the cave, coming out into the daylight and observing the real world. At this moment, the prisoner is free, and he is able to recognize much more truth about things than he ever could have by looking at the shadows of objects on the wall of the cave. In a similar way, each individual's personal perspective keeps them from seeing truth, limiting their freedom. It is only when we escape our mental chains that we see the world freely, gaining multiple perspectives, weighing them, and arriving closer to the truth. Flatland is a place that doesn't exist, but it is through imagination of a utopia such as Flatland that "the nowhere puts the cultural system at a distance," allowing us to "see our cultural system from the outside."²⁵ Utopian visions show us that our current situation is not inevitable.²⁶ From this point of view, we liberate ourselves, learning

²⁴ Plato, *The Republic* (New York: Basic Books, 1991), 193-197.

²⁵ Ricoeur, *Lectures on Ideology*, 17.

²⁶ David Graeber, *Fragments of an Anarchist Anthropology* (Chicago: Prickly Paradigm Press, 2004), 9-10.

that there is nothing inherent about our cultural system and becoming more aware of the vast range of potential realities we could create.

Reading fictional utopias can be compared to conducting anthropological work, as both give us a broadened view of our world(s). In his book *Argonauts of the Western Pacific*, the British anthropologist Bronislaw Malinkowski gives the goal of the ethnographer as being able to “. . . grasp the native’s point of view, his relation to life, to realize his vision of his world.”²⁷ Marcus and Fischer, in *Anthropology as Cultural Critique* state that “In using portraits of other cultural patterns to reflect self-critically on our own ways, anthropology disrupts common sense and makes us reexamine our taken-for-granted assumptions.”²⁸ We observe others that we may see how they see themselves. In doing so, we may better see our own selves in our own worlds. Edwin Abbott makes a similar argument in *Flatland*.²⁹ He helps us to recognize that our “deviant attitudes about reality,” our “ideological and utopian distortions” are not the only perspectives on the world, and that our perception of reality is just that—a perception.³⁰ When we gain new perspectives, we arrive closer to Truth in the Platonic sense, truths about our world, and truths about ourselves. To do so, we must escape our own “flatlands”; we must we must venture into new dimensions.

²⁷ Bronislaw Malinkowski, *Argonauts of the Western Pacific: An Account of Native Enterprise and Adventure in the Archipelagoes of Melanesian New Guinea* (New York: Routledge and Sons, 1932), 25.

²⁸ George Marcus & Michael Fischer, *Anthropology as Cultural Critique: An Experimental Moment in the Human Sciences* (Chicago: University of Chicago Press, 1986), 1.

²⁹ Abbott, *Flatland*.

³⁰ Ricoeur, *Lectures on Ideology*, 3; Mannheim, *Ideology and Utopia*, 87.

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