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The Workings of Space in Steve Tomasula's *VAS: An Opera in Flatland*

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Abstract

This article investigates the workings of space in Steve Tomasula's first novel *VAS: An Opera in Flatland* (2002). As an experimental novel, *VAS* makes use of space on different levels. The first one is the spatial form, which informs the structure of the novel. Rather than following a linear narration, *VAS* employs a wide range of sources and topics and incorporates them within its fictional world with the use of hypertext. The narrative space of the novel, which is the fictional space where the characters of the novel are dwelling in, is America in an unidentified future time. In this place, the human body becomes a site on which different discourses such as history, genealogy, and medicine interact. Finally, the spatial design of the novel presents not only verbal text but also images, graphics, pictures, charts that all help the book mimic the human body, and thus bring the physicality of the book to the front. The interaction of these three levels of space exhibits that as an example of experimental fiction *VAS* uses the space of the novel in such a way to reflect the tenets and answer the needs of the digital age.

Keywords: *VAS: An Opera in Flatland*, Space, Spatial Form, Hypertext, Materiality

Steve Tomasula'nın *VAS: Düz* Ülkede *Bir Opera* Romanında Mekânsal Özellikler

Öz

Bu makale, Steve Tomasula'nın ilk romanı olan *VAS: Düz Ülkede Bir Opera* eserindeki mekânsal özellikleri incelemektedir. Deneysel bir roman olan *VAS*, mekânı farklı boyutlarda ele alır. Bunlardan birincisi romanın yapısını oluşturan mekânsal biçemdir. Roman, doğrusal bir anlatı takip etmekten ziyade birçok farklı kaynaktan alıntı yapar ve bunları hipermetin aracılığıyla romanın kurgu dünyasıyla birleştirir. Romanın kurgusal mekânı, yani roman kahramanlarının yaşadığı mekân, gelecek bir zamandaki Amerika'dır. Bu Amerika'da insan bedeni, üzerinde tarih, gen bilim, ve tıp söylemlerinin etkileşimde bulunduğu bir alana dönüşmüştür. Son olarak, romanın mekânsal tasarımı sadece sözlü metni değil aynı zamanda kitabın görsel olarak insan bedenini taklit etmesini sağlayacak imgeleri, grafikleri ve çizelgeleri içermektedir ve tüm bunlar kitabın maddeselliğini ön plâna çıkarmaktadır. Bu üç mekân arasındaki etkileşim, deneysel bir kurgu örneği olan *VAS* eserinin, roman mekânını, dijital çağın özelliklerini yansıtan ve ihtiyacına cevap veren bir biçimde kullandığını gösterir.

Anahtar Kelimeler: *VAS: An Opera in Flatland*, Mekân, Mekânsal Biçem, Hipermetin, Maddesellik

Steve Tomasula is an American novelist and short story writer who has produced experimental works. His debut novel *VAS: An Opera in Flatland*, an image-text novel with art and design by Stephen Farrell as stated on the book cover, was published in 2002. *VAS* is classified as a novel on biotechnology and genetic engineering that speculates on the times on which it is written and deals with issues of lineage and genealogy, histories of body and language, identity, and body politics in a cultural milieu of high technology and in the flatland of consumerism, commodification, and fashion. Tomasula calls his work an image-text novel for it combines verbal narration with pictures.

In this respect, as a word-image novel, *VAS* portrays a multilayered treatment of space realized in structural, narrative, and material levels. Postmodernist spatial form in *VAS*, which is the structural form of narrative, turns the novel into a scientific treatise

on a wide range of topics extending from the history of eugenics to languages alongside different topics. The narrative space in *VAS*, the space where the story takes place, is the flatland in an unidentified future time where the human body becomes a specific site and commodity on which cultural, political, and medical discourses interact. The treatment of the body as a spatial construct is completed by the material/physical features of the book such as the inclusion of pictures and drawings of the human and animal bodies, pedigree charts, diagrams, and a twenty-five-page-long gene code. Tomasula turns the novel into a body on which different levels of spaces interact with each other and therefore shows that the contemporary novel inevitably reflects the tenets of digital writing and thus answers the needs of the digital age.

In his critical essays and articles, one of Tomasula's major concerns is the status of the novel in the present age. He often asserts that the novel should free itself from the realistic and mimetic tendencies of the previous decades, instead it should answer the needs of "information design and emergent culture" of what he calls the late postmodern era ("Information Design" 436). The novel should do this not just by its content but also with its form ("An Apology" 118). This concern for the formal qualities of the novel is always present in Tomasula's fiction. According to Mark K. Holland, his fiction achieves to "formally explore how literature in a digital age must grow increasingly and insistently material . . . [and] revise the status of literature, the genre of the novel, and material theories of art" (29). Similarly, Flore Chevaillier underlines that "the page's material existence is central to the reading process" (181) in *VAS* and this experimental physical form of the novel requires "a different mode of reading" as well as bringing along a "mode of experimental politics" (180). Today, Tomasula stands out as a writer of "formally adventuresome literature" that is shaped and represented by such names as Raymond Federman, Walter Abish, George Perec, Gilbert Sorrentino, William Gass, and Lee Siegel as well as the writers of first-generation hypertext novels all of whom Tomasula regards as the trail blazers in his literary backdrop ("Not Just Text").

Tomasula's late postmodern fiction addresses the needs in fiction writing by building a network in its narrative and form. By using hypertextual design in the telling of a story with many connections from history, language and genetic engineering, *VAS* becomes the network

novel that Tomasula sees as the most fitting genre to reflect the present zeitgeist. In the light of Tomasula's critical ideas, this article will focus on the three categories of space mentioned earlier. First, the spatial form that is built up by postmodern narrative elements, and extended by hypertext; second, the narrative space that is the Flatland, and third the material space of the book that mimics the human body. As will be discussed, these three levels of spaces are intertwined with each other and it is crucial to have an overall understanding of them to see the dynamic workings of space in contemporary fiction.

Structural Space: Spatial Form and Postmodern Narrative Elements

The title of *VAS: An Opera in Flatland* comes from the science fictional work of the English writer Edwin A. Abbott's *Flatland: A Romance of Many Dimensions* published in 1884. In fact, Tomasula does not only use Abbott's Victorian satire as an inspirational source for the title of his novel but he also incorporates many of the elements from the work such as its main character Square and its setting, the Flatland, where he lives. Direct quotations from Abbott's work also populate *VAS*. Tomasula appropriates Abbott's 1884 work to depict the shallow cultural landscape of his own fictional work. Along with other intertextual elements that are going to be discussed in this section of the article, using Abbott's satire to criticize contemporary culture adds richness to the content and form of the novel through a dense textual layering.

In Abbott's *Flatland: A Romance of Many Dimensions*, the main character and narrator is Square who lives in the land of two-dimensional figures that he calls the flatland. Square tells that his universe can be understood much better if one thinks about the geometrical shapes drawn on a page. These geometrical shapes are the inhabitants of his country and they cannot view each other from a three-dimensional perspective but only as lines. While he has the shape of a square, there are other shapes in his flatland such as circles, or hexagons. The concept of three-dimensionality is not known in Square's flatland and the society is hierarchically organized in accordance with their geometrical shapes. However, in visionary dreams, Square comes to realize that other worlds exist such as the Lineland where things are

on a single line, and Spaceland which is the land of three dimensions. In his trip to the Spaceland, Square understands how their view of the world in Flatland was very limited. In addition, when he tries to spread the word about the existence of higher dimensions in Flatland, the totalitarian regime prosecutes him because of heresy and Square ends up in jail where he starts to write about his memories in different dimensions.

It is meaningful that Tomasula transfers Square who is a character traveling among different spaces and dimensions, and who finally becomes a misfit in his own dystopic science fictional world. As Anthony Enns points out, Abbott's novel "already emphasizes the interrelationship between textuality and materiality by imagining a world that has the same dimensions as the printed page" (57). Tomasula's appropriation of this science fictional work that deals with different dimensions of space comments both on the spatiality and the cultural climate in *VAS*. Abbott's flatland is turned into another flatland in an unidentified future in the United States in which the main character Square tries to decide whether or not to have a vasectomy. The story revolves around him, his wife Circle, their daughter Oval and their Mother. The plot does not contain much action or progression; the main storyline starts with Square's signing the consent form for the procedure he will undergo, moves on with his hesitancy about this procedure that would leave him sterile, and finally ends with the vasectomy**.** In the meantime, Mother insists that Square and Circle should go to the opera for it may ignite the romance between the couple for a second child.

This simple plotline is immensely expanded by Tomasula with the inclusion of quotations from many different sources, which turns the novel into an intertextual novel given through hypertext. Second, the inclusion of visual elements, charts, drawings, pictures, screenshots of websites and the overall design of the book by Stephen Farrell, "an award-winning graphic artist and typographer" (*VAS* back cover) expand the story spatially. Rather than using a single linear plot; *VAS* presents ideas, opinions, historical facts on issues such as history, language, genetic engineering, political manipulation, and social and cultural values synchronically through Square's story. In other words, the synchronicity of "multitudes" (*VAS* 298) rather than the chronology of a single event functions as the organizational element in the book. This synchronic organizational device renders

the narrative "a spatial affair" by creating a spatial platform in which the elements of composition have significance rather than "the artful depiction of a familiar world" (Klinkowitz 39).

While the novel does not follow a linear order, in self-reflexive moments, Square or an unidentified narrative voice questions the validity of "the linear plot." (*VAS* 28, 75, 86). Apparently, the linear plot is not an appropriate device for telling a story whether it is fictional, historical, or scientific as "[l]inear plots not being the only model for change" (*VAS* 75). Linear historical and scientific narratives turn out to be fictions or constructs that are created under the dominant ideological discourses. This is why the workings of these two fields of study, history and science, are constantly criticized in the novel. They propose progress and achievement under the mask of linearity; however, facts are mostly different from what has been presented: "Progress in science, that is, achieved by eliminating from study those problems that do not have scientific solutions." (*VAS* 87). Progress in science is a narrative construct depending on the selection and elimination of some of the outcomes. A few lines after this statement, a topic that is prevalent throughout the novel is presented: "History being written by the victor, of course" (87). As the scientific discourse manipulates facts, eliminates, and reorders them, history is again open to manipulations and modification by the victorious or dominant classes. In the same pages where the discourses of science and history are criticized, a chart showing the evolution of the word "ape" to "man" is given. The history of science and history itself is never free from the workings of language according to Tomasula: "And wasn't history, revisionist or otherwise," thinks Square, "as much an act of selective forgetting as it was remembering?" (*VAS* 56). Therefore, the linear plots used both in science and history turn out to be tools to manipulate knowledge and power by the people in power. Tomasula's critique of science and history echoes Lyotard's critique of metanarratives in *The Postmodern Condition*. Both Lyotard and Tomasula view science and the ways it legitimizes itself as metanarratives or narratives that are used to shape societies and regulate power mechanisms. As both discuss, metanarratives are losing their function and dissolving with the cultural and political changes in contemporary times.

VAS also encompasses an expanded array of critical, literary, and historical texts. Tomasula situates the story of Square within the history of evolution, science, and language. The operation he is to

undergo is told within the framework of forced sterilizations practiced in totalitarian regimes. The social enforcements are put into practice by the supporters of eugenics, which was considered to be a "science" for a certain period in history in Nazi Germany as well as the United States. The idea that history repeats itself in different and same geographies is prevalent throughout the novel. In this respect, the novel becomes a self-conscious critical treatise on history, science, and their teachings and enforcements on the body and language. As stated on the website of the novel, by incorporating various representations of the body, the novel "recounts how differing ways of imagining the body generate differing stories of knowledge, power, history, gender, politics, art, and, of course, the literature of who we are." Through its critique of science, history, and the culture of flatland, it is emphasized in the novel that master narratives of modernism such as controlling the body or patriarchy are not valid anymore in postmodern times (186). They are put under erasure in the novel in a Derridean sense. Tomasula physically puts modernist approaches under erasure by crossing them out.

This critique of science by the incorporation of numerous quotations from a variety of sources turns the novel into a rich intertextual construct. Through hypertextual design, the intertextual narration enables the novel to problematize the issues it deals with. In her reading of Mikhail Bakhtin's concept of dialogism, Julia Kristeva points out "any text is constructed as a mosaic of quotations; any text is the absorption and transformation of another" ("Word, Dialogue, and Novel" 37). From the understanding of the literary text as "a mosaic of quotations," she comes up with her own understanding of "intertextuality." Being a mosaic of quotations and thus an intertextual novel, *VAS* complies with Kristeva's understanding of intertextuality that "participate[s] in history" by going beyond "linear history:"

> By-introducing the status of the word as a minimal structural unit, Bakhtin situates the text within history and society, which are then seen as texts read by the writer, and into which he inserts himself by rewriting them. Diachrony is transformed into synchrony, and in light of this transformation, linear history appears as abstraction. The only way a writer can participate in history is by transgressing this abstraction through a process of reading-writing; that is, through the practice

> of a signifying structure in relation or opposition to another structure. History and morality are written and read within the infrastructure of texts. The poetic word, polyvalent and multi-determined, adheres to a logic exceeding that of codified discourse and fully comes into being only in the margins of recognized culture. . . . There is no equivalence, but rather, identity between challenging official linguistic codes and challenging official law. (Kristeva 36)

By consciously reading and writing a text within the social and historical context, a writer is aware that s/he is incorporating formerly written texts synchronically. In this way, the text is freed from the idea of linear progression. According to Kristeva, Bakhtin's carnivalesque discourse, which is also the starting point for her theory of intertextuality, is a way of "challenging official law" because it enables the defiance of "official linguistic codes." Using synchronicity and intertextual elements, *VAS* can be said to be participating in the Bakhtinian carnivalesque discourse while criticizing historical as well as scientific discourses. Starting from this premise, with the intertextual mosaic of different voices, *VAS* shows that in postmodern times we witness "the morphing of History as a unified narrative into history as the multiplicity of voices" ("Bytes and Zeitgesit" 343).

VAS achieves this by laying bare the linguistic and genetic codes that constitute language and the human body, respectively. In the novel, linguistic evolution is compared to the evolution of the human bodies and the textuality of the human body is frequently emphasized. The use of pedigree charts informs the reader about the history of families as well as the history of language. Language has been evolving under different discourses and in cultural contexts just like the human body that is being reshaped through the workings of culture. While writing texts, the bits and pieces that are brought together are like the DNA codes that make up the human body: "The problem in writing a story, like making a diorama, was in trying to make sense of a pool of ideas" (*VAS* 56). On the next page in the novel, Square's speculations on the nature of writing are mixed with DNA codes that are scattered on the page.

There are self-reflexive elements in *VAS* that contribute to the spatial form in the novel by foregrounding the workings of fiction

writing. The questions regarding how to write stories and make them cohere in the flatland of the novel are examined quite often. In the sections where Square's story is given, there are comments given in parentheses that work like the use of asides in theater and they attract attention to the novel's presence as a construct: "As he entered the room, her eyes widened on him, her smile evaporating (as they put it in novels), nasalises contracting for heavy breathing while his own heart began to pound (novel, again), mean arterial pressure rising" (VAS 183). The blurring of literary genres like the novel and opera, historical and scientific discourses given through textbooks, reports, and the coexistence of different media forms like pictures, pedigree charts and web sites all create a vast self-conscious work of art.

According to the critic Lance Olsen, the hybrid nature of *VAS* necessitates a conscious reading approach from its readers. First, Olsen defines two main textual threads in the novel that are the primary text (Square's story) and the paratext, or the intertextual mosaic. The fact that these two texts are given side by side blurs the boundaries between the two. Olsen argues that in *VAS* "paratext . . . adulterates an already visually impure text constituted precisely from other paratexts . . . that are integral to the primary text [sic]" (217) and this creates a constant tension in which "[p]aratext collapses into text even as text collapses into paratext" (217). In this way, Tomasula reminds his readers to be conscious of the workings of the text during the processes of reading and writing:

> Tomasula appropriates and perverts the grammar of the distractive habitual, disturbing it endlessly while making the participant re-conscious both of the procedures of the spectacular—which is to say the dynamics of power, which is to say the dynamics of [[reading]] and [[writing]]—and the opportunity for non-normative modes of narrativity in the world, which is to say non-normative modes of individual and social existence itself. (Olsen 223)

VAS sustains the progression of Square's story together with the paratextual elements through hypertextual design which functions as a formal device and through the necessary narrative acts of digression. Digression becomes one of the major narrative elements in *VAS* that extends the spatial form. In the initial sections of the novel,

the primary text and paratextual elements are given synchronically. However, starting from page 57 with a pedigree chart that physically extends to three foldout pages, the narrative veers off and the paratext continues for about fifty pages. This pattern is repeated throughout the novel dividing the narrative into smaller units and loosely connecting them. Therefore, digression generates a spatially constructed ground for narration by breaking down chronology and temporal sequencing.

Narrative Space: The Posthuman Body in Flatland

Since narrative space is a wide and encompassing term that can refer to the setting, specific places, cities, or mental and real geographies, a specific focus is needed in the analysis of the narrated space in fictional works. In *VAS*, the human body in flatland becomes a territory for the workings of medicine, genetic engineering, history, and politics. Tomasula situates the human body among the interplay of various discourses. By doing this, he shows that the body has become an open field of transformations. It is changed, deleted, and parts of it have been replaced by machines and medical instruments and finally turned into a cyborg (*VAS* 160) in an age when "rewriting your body seemed natural" (*VAS* 98).

Throughout the novel, Square's indecision to undergo vasectomy is emphasized as an unwillingness to change his body. He cannot let go of his former body unlike some people who willingly accept change in their bodies through a myriad of operations. His wife Circle has also had an operation that left her sterile and now "for the good of their society" (nd.edu/~stomasul/VAS_homepage), Square has to have a similar operation. Square speculates on his unwillingness to have the procedure:

> He himself couldn't explain this irrational attachment to his old body. It made no more sense than confusing himself with an old favorite hat, or refusing to let go a comfortable sweater that had a hole in one elbow—even though wearing it meant getting cold. And of course he wanted what was best for his family. Children engineered to repel mosquitoes, engineered not to develop an appendix, or wisdom teeth, or any anachronistic appendages—who could not want that for

> their descendants?—and all for the having by simply creating a litter of embryos from which they could select the one with the best genetic profile. (178)

The flatland of America where they are living seems to offer many choices to its citizens from rewriting their bodies to selecting healthy genes for their unborn children from gene pools—such as picking genes from "the designer genes: genes from cod fish for increased tolerance to cold, genes from Gila monsters for increased tolerance to heat" (*VAS* 178)— or from consuming as much as they can afford to choosing between "hundreds of salad dressings" (*VAS* 53). What seem to be free choices at first sight, though, turn out to be programmatic enforcements by the people in power who manipulate science and facts to keep society under control. These enforcements are popularized and marketed through fashion styles, beauty pageants, and commodity products, and it becomes fashionable to change and rewrite bodies. The operations the couple undergo are shown as a choice to better their lives, however, as is seen in Tomasula's incorporations of many quotations, forced sterilization has been effective throughout history and has been implemented like "vaccination" (122) by totalitarian regimes:

> And that mental-health facilities should continue vaccinating those who failed an IQ test… as well as epileptics…and the antisocial: alcoholics, the sexually promiscuous, petty criminals, children with disciplinary problems, and other hereditary diseases. For the good of the patients. [For the good of the] society. (*VAS* 122)

Tomasula's flatland is a "landscape of Technoflesh" where bodies are arranged through codes by genetic engineering (161). Although the recent developments in genetic engineering are phenomena of the twenty-first century, it is seen that genetic engineering serves for purposes of social engineering like the eugenics of the twentieth century or medical programs of previous eras. Eugenics in the first half of the twentieth-century was considered a branch of science just like genetic engineering today. Tomasula quotes from Winston Churchill and Adolf Hitler in two consecutive pages facing each other and when the book is closed these quotations overlap:

> The rapid growth of the feeble-minded classes coupled

> as it is with steady reduction among all superior stocks constitutes a race danger which should be cut off before another year has passed. Winston Churchill (*VAS* 96)
>
> Whoever is not bodily and spiritually healthy and worthy shall not have the right to pass on his suffering in the body of his children. Adolf Hitler (*VAS* 97)

The juxtaposition of the ideas of these two people from very different ideological backgrounds shows that there was not much difference in their thinking patterns when it came to shaping the society according to their political programs. This form of presentation extends Tomasula's critique of the science since he defines science as "a history of failed theories" (73) because it has been used as a tool to govern, manipulate people, and justify racism. Similar to Lyotard's critique of science that legitimizes itself through language games (*The Postmodern Condition*), Tomasula states that science uses Latin words and the lens of objectivity for legitimizing itself (104).

One of the characters in *VAS*, Mother is described as "old blood" who still thinks it is favorable to have romantic affairs and reproduce. Despite her traditional way of thinking, her body has been adapted into the new medical scene. Thanks to some replacements in her body that enable blood transmission and renewal, she can be treated more easily. She is described as one of the "cyborgs" of the flatland and her body is part human and part machine. Like Square and Circle, Mother's body exemplifies the invasion of the body by discourses interacting in the flatland. The bodies of these characters exemplify what Katherine Hayles calls the posthuman body which is created through "cybernetic" as well as "biological interventions into the human body:"

> The two sites most often associated with the posthuman are biological interventions into the human body—cloning, gene therapy, artificial wombs, fertilization in vitro, etc.—and cybernetic interventions that either modify the human body or fashion artificial life in its evolutionary image. Both sites have been deeply influenced by thinking of the human mind/body as information: biology, through seeing DNA as an informational code; cybernetics, through envisioning systems as constituted

> by the flow of information through them. (Hayles "The Posthuman Body")

Tomasula's characters in *VAS* are constructs rather than real personages and they can be seen as the ultimate examples of the posthuman body for they are being intervened by genetics and computer technologies. Although posthumanism can be defined and interpreted differently, here it refers to the view that the human body is open to modifications that can be performed with the help of advanced technology. In other words, the bodies of the characters are being shaped by scientific as well as media ecologies, which refers to the environment shaped by different media such as radio, television or the Internet. In the novel, Mother's process of becoming a cyborg is given in detail:

> Before she'd become cyborg, Mother's continual testing and blood treatments had been torture. Her arms were mottled with bruises inflicted by nurses puncturing them over and over to find her hair-line veins . . . Then one sunny morning, the doctor stopped in . . . with a new offer: a synthetic sponginess that could be surgically implanted in her shoulder to serve as an interface between her body and the equipment they used to draw blood from and put chemicals into her veins. Then, Oh happy day! After the operation, getting her blood up, having it drawn and replaced via an IV or any machine was as easy as plugging an extension cord into an outlet. And even though she was now part machine, it had been so natural. So welcome.
>
> The IV pump purred, its digital readout metering a drip that ran down tubing and into her shoulder, the flesh color of the implant making it difficult to tell where it began and she ended. (*VAS* 146)

Square finds it strange "to realize that [his] . . . mother-in-law is a cyborg" (144). He defines the Blood Ward of a hospital as "the hostile environment of deep space" (145) and in order to survive there, people need enhancements to their bodies, therefore to be turned into cyborgs. Square comes to realize that the hostile environment is not only the Blood Ward of the hospital but also the flatland they are living in. As the critic Anne-Laure Tissut maintains in her article,

the element of fear is always present in the novel and is revealed through the main character Square's indecision about the procedure. According to Tissut, Square's fear does not stem from the operation but from the social and cultural climate of the flatland. Advertisements and mainstream media is popularizing "the mirage of eternal youth" enabled by genetic engineering "at the cost of a terrifying ignorance, created by media strategies of fragmentation and deviation which are largely responsible for the loss of memory and history" (Tissut). This climate is depicted in the novel as barren and shallow and dictated by fashion trends that are popularized by media.

Flatlanders are stuck in this antagonistic environment although they do not realize their condition except for Square: "It occurred to Square that he hadn't always known he'd lived in Flatland. At first, he'd thought it was simply a flat land. And he began to wonder what he'd been before he realized he was a Square" (*VAS* 315). Square's realization of his condition in this flatland does not occur as an epiphany. He tries to make sense of the situation that they have turned into bodies to be designed in the land of techno-flesh but he can neither cope with the idea nor figure it out in an influx of information. And he later turns to his old thinking patterns:

> [H]e wondered how the marvelous had become so mundane without his even noticing, the landscape exerting itself on him as invisibly as subliminal advertising (a '70s phenomenon). And like someone sitting in a theater, coke in one hand, popcorn in the other, who suddenly realized that they bought into both coke and popcorn only because ads had been slipped in between the frames of a musical comedy, he began to grow angry, the pressure, suggestions, changes, even in who was, and all for the health of?— [sic] (*VAS* 182)

Despite his anger for being manipulated by the media, medicine, and social engineering programs, Square gradually returns to his old ways of thinking and accepts his situation as a flatlander. Furthermore, he later feels sympathy for the flatlanders. This can be seen as his inability to struggle to keep his body "natural" when everyone is having operations and turning into cyborgs. In the scene when he tries to make himself believe that the only way to live in this flatland is by consenting to change his body, he copes with his situation by finally choosing to conform to his society:

> He looked on Circle with awe now, now that he understood the routine élan with which women lived within their edited, critiqued and rewritten bodies. And what a luxury he had had in being able to take his 'natural' body for granted.
>
> A great wash of sympathy welled up in him for Circle. For everyone in Flatland. Including himself.
>
> That night, he got into bed beside Circle, held her tight and said, "I know you're not a monster . . . Your mother's not a monster, either, you know." (*VAS* 323-324)

The textual elements in *VAS* are self-consciously portrayed as literary and linguistic constructs. Similarly, the characters in the novel are constructed by language, genetic coding, and information technologies. The various representations of the body Tomasula uses in *VAS* show that like languages, the human body is open to be reshaped and designed by societal and cultural forces. Biology is defined as a territory or rather as a "mainly occupied territory" (*VAS* 294) and bodies are now products of a larger society made up of fragments introduced by organ transplantations or changes in genes unlike the bodies that were "once closely identified with individual people" (301).

Tomasula addresses how human beings and their bodies are changing in his article "Information Design," where he reintroduces the concept of humanism with its various interpretations in postmodern times. Drawing on Katherine N. Hayles's definition of the posthuman in her book *How We Became Posthuman* (1999) as "an amalgam, a collection of heterogeneous components, a material-informational entity whose boundaries undergo continuous construction and reconstruction," (3) Tomasula remarks that the human bodies are like texts to be arranged, written, rewritten and they become "as rearrangeable as they are" (*VAS* 300) although it will not always be easy to read and understand them with the available information. An example of this difficulty is shown in the novel with the inclusion of a twenty-five-page long gene codes for chromosome twelve. The codes occupy the novel, making this section one of the most perplexing as they prove to be very hard to read. When asked by Kiki Benzon about the role of this section "where information ceases to clarify" (Benzon) in Square's decision-making process, Tomasula states that

> [I]t's informed by Foucault's idea that discursive objects

> come into being and you don't even know where they come from. . . Even if you had the information, it's not knowledge. There's that one passage people always ask about—chromosome 12, which goes on for a page. It's just a small part of that chromosome. I wanted to include this partly as a way to show how complex these things are. I also wanted to use a chromosome that shows the difference between humans and chimps—an in-joke that I think I ended up cutting from the book. Well, I downloaded the chromosome and it filled up my hard drive. I had no idea.

As quoted above, there is too much information Square has access to but due to lack of knowledge, in other words, an overall comprehension of his situation, he yields to the operation to end the melodrama that his family is living in because of his indecision to have the vasectomy. This operation "represent[s] his ultimate transformation from a natural body into a rewritable text" (Enns 73) and therefore the body's transformation into a territory. It is frequently emphasized in the novel that he must consent to the operation for the good of his family and society because it will end the transfer of genes to the next generation and help purify gene sequences. Square finally yields to his fate in the flatland and decides to have the operation:

> Then the doctor rushed in as doctors always did anymore, bounding from cubicle to cubicle like production-line workers who assemble jets or other bodies too ponderous to move. "How are we today?" he said, snapping on an intercom in the wall. Before Square could answer, a spunky pop tune played: "I think I love you so what am I so afraid of?" (367)

From Edwin Abbott's flatland to Tomasula's, science and technology have developed immensely. While Abbott's character Square ends up in jail since he tries to teach people about the existence of higher dimensions like the three-dimensional Spaceland, Square in *VAS* ends up in an operating room finally having decided to undergo a vasectomy. Tomasula situates his characters and specifically their bodies in a cultural climate of amnesia, oblivion, consumerism, and conformism. *VAS* presents a wide network of texts and paratexts in which to think about contemporary times. The novel becomes a warning about the prospects of advanced technology. In one of the

scenes in which Square and Circle talk about the meaning of art, Square states that artworks are not capable of portraying America which has turned into a dystopic fiction itself rendering art useless: "A funeral home in L.A. will put your loved one's corpse in a drive-up window so mourners can pay their respects without getting out of the car. What novel can say more about America than that?" (284). America, depicted in *VAS*, is a land where technology is intruding into the human body, not only by changing it physically—as is seen in cyborgs—but also by changing the cultural landscape and its accompanying ethical values and assumptions.

Material Space: The Body and the Book

As is stated previously, *VAS* is a novel written by Tomasula and designed by Stephen Farrell, whose name is included on the cover page of the book. Tomasula states that when the elements of design in the book are to be commented on or cited, Farrell's name should be referred to. The visual elements of *VAS* show that designing novels physically and materially has become an issue to be dealt with during the production process of literature. With the advent of computers, digital writing technologies and media culture becoming increasingly visual, it has been a concern for these writers to update the novel through the use of hypertext with an eye on the tradition of artists' books/book arts and fiction that has used words and images.

In an interview, Tomasula states that he consciously made an effort "to use the body of the book as a metaphor for the human body and vice versa" ("Not Just Text"). This required him and Farrell to design the novel in a close relationship with its content. As discussed above, the narrative space of *VAS* concentrates on the human body within the helix of language, history, and genetics. Similarly, the book with its use of different colored pages, type fonts, and visual images becomes a metaphorical body mimicking the human body. The cover pages of the book are in the color of human skin showing veins underneath. Various visual representations of the human body—pictures of skulls, eyes, hair, DNA codes, family pedigrees—populate the pages of the book, which all work to shape the material space of the book and make it a body in itself. As Sammercelli also points out in her article, *VAS* "obsessively reshuffles representations of the body

while treating it both as subject matter and as a textual construct" (78). *VAS* uses hypertext as a tool to connect the intertextual elements which it incorporates and keep them together so that they interact with each other. Hypertext in *VAS* functions through vertical lines given on the sides of the pages. These vertical lines work to divide the blocks of verbal text that are given in different type fonts. Each textual unit or block is justified to a different line so that they are separated from each other.

While the textual blocks are separated from each other both through type fonts and the lines they are justified, they also work in collaboration by commenting on and referring to each other. This kind of hypertextual structure is reminiscent of the act of scrolling down the pages on the computer screen. As the reader scrolls down the pages of *VAS*, s/he is faced with new blocks of text that ironically reveal conflicting information to the former blocks. Alex Link sees the vertical lines "as the most consistent design element" in the book stating that they work to break linearity throughout the novel. According to Link, the lines present a "visual impression . . . of its protagonist's meditation on the linear continuity of ancestors and descendants" and thus they create "a visual pun on both lineages and linear plots." Through breaks and ruptures, the lines exemplify the impossibility of sustaining linear plots:

> This line is prominent enough so as to appear akin to a continuous narrative thread, but it is actually often interrupted, scrambled (314), sutured (158, 253), or snipped (131). Its continuity, like that of a family line or a replicated gene sequence, is not without interruption, variation, or mutation, and its linearity might simply be a convenient fiction, in contrast to its actual entanglements.

As discussed in the first part, by breaking linearity on a textual level, digressions and nonlinearity extend the narrative spatially. Correspondingly, the hypertextual design of the novel leads to spatial extension this time on a visual level. The pages of the book become an open field on which codes, visuals, and verbal texts constantly pop up making it look like an active and animated web page. The dense intertextual elements of the novel are thus designed and presented on the material space of the book through an innovative hypertextual design that functions not through links (as in footnotes) but through

vertical lines. By using hypertext, *VAS* remediates a writing style that has specifically been designed for computers. While doing this, it both mimics the web page and diverts from it by foregrounding the material specificities of the printed page and the book. In sections where the screenshots of the webpages are given, hypertexts converge into each other.

As noted by Tomasula and different critics of *VAS*, the book also functions as a metaphorical component of the human body. The hypertextual design exemplifies visually that the human body is not only a product of genetics but also under the influence of advanced technologies. The posthuman body as "a material-informational entity" (*How We Became Posthuman* 3) is observed in the characters of the flatland who consciously or unconsciously open their bodies to constructions and reconstructions. With its intertextually rich verbal text and visual and material features informed by text books, comic strips, web design, and hypertext, the book is also a "material-informational entity." In this respect, the book is the posthuman text per se on which different representations of the body interact.

The posthuman text becomes further stratified when the pages of the book mutate into an opera stage as Sqaure and Circle finally decide to go to the opera upon the insistence of Mother. For thirty-six pages, *VAS* completely assumes the format of a comic strip which it previously employed in certain sections. This section depicts the opera stage and the performance of the opera called *The Strange Voyage of Imagining Chatter*. In this section, the left and right pages of the book are treated as a single page on which the opera stage is depicted. At the bottom of the page, Square and Circle are depicted as geometrical shapes of a square and circle, and they watch the opera from their seats.

In the world of *VAS*, the opera has also changed and been adapted to this contemporary Flatland. It tells the history of evolution among the chatter from people and animals. There are also animals on stage participating in the performance and the stage finally turns into a surgery room where head transplantations between monkeys are performed. During the opera piece, two main narrative threads continue, one being the story in the opera, second, being the interaction between Square and Circle. Here the couple is once again positioned among various sounds, images, and texts, and they mirror what is happening

on a larger scale in the opera. In this respect, *The Strange Voyage of Imagining Chatter* also enacts a metafictional purpose for *VAS*. It is a work about the "hyperinflation" of information, voices, discourses just like the rich intertextual novel *VAS*. The opera is a multimedia art form containing music, performance, and stage design. Its usage within *VAS* in the comic strip form foregrounds two features of the novel: firstly, the novel employs several techniques from multiple genres constantly blurring the borders between them in a late postmodern sense, and secondly, the book grows into a textually and spatially rich platform for competing positions and meanings in which the opera presents only a slice of it as a cultural product.

Conclusion

Tomasula defines contemporary cultural landscape as being dominated by the intervening of digital technologies into our lives and digital tools such as the Internet as the dominant means with which people communicate ("Bytes and Zeitgeist"). The acceptance of the dominance of the digital brings along new questions regarding writing, authorship, and the printed book. The features of the digital wor(l)d such as "malleability, ease of recombination, dependence on the image, interactivity, infinite linkage, and therefore indeterminacy, dispersal of origins, of author and authority" also shape the present epoch (343). How Tomasula defines the transformations introduced by the advent of the digital landscape can indeed be read as a postmodernist manifesto on the concepts of history, indeterminacy, free play, and hybridity to name a few. In such a perplexing environment, the form of the novel certainly needs to be redefined and accommodated to the needs of the digital age. Whereas the form of the novel has always included certain forms of information design—visible in chapter headings and line breaks ("Information Design" 436)— in contemporary times, the question "[w]hich architecture best tells our story?" (439) should be rethought. In his view, the network novels answer this need of designing information. He suggests that "reading novels as though they were written to reflect the networks through which contemporary life has organized itself" will illuminate not only the stories but also the world the stories are emerging from (446). These network novels are best presented through hypertext which enables telling stories with multiple connections and causes and "the form of many hypertexts

. . . and online or new media novels . . . seem to inherently embody narrative (and life) as network" (448).

In light of these, it can be said that *VAS* is the ultimate network novel answering the needs of the digital age through its treatment of space on different levels. With its intertextual hypertext design and cross-genre features, it becomes "an information design solution" (Tomasula "Information Design" 436) to the vast complex changes in science and digital technologies. Tomasula and Farrell redefine the novel by connecting verbal and visual elements to each other in the writing and designing process in an age of information and media flux. This collaboration between the author and designer and the interaction between the verbal and visual text render the different levels of spaces of the novel inseparable from each other. First, the structural elements of the narrative are tied to each other through a spatial form. Departing from linear narration, the spatial form is further enhanced by the incorporation of postmodern narrative elements. Secondly, in the narrative space of the novel, the human body becomes a territory for the operations of different discourses such as history, genealogy, and medicine. Finally, the spatial design of the novel that employs hypertext presents a myriad of images, graphics, and charts that all help the book mimic the human body. Altogether, they bring the physicality and materiality of the book to the front. The workings of this tripartite space—form, content, and the design of the novel—show that the formal features of the narrative and the materiality of the book become part of the message conveyed by the content novel. As a late postmodern novel, *VAS* addresses the questions regarding the form, place, and role of the novel and presents an ingenious answer to these through interactive workings of space. In other words, *VAS* uses the space of the novel in such a way to respond to the cultural shifts it has been produced and to the needs of the digital age.

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