

19. *How, though the Sphere showed me other mysteries of Spaceland, I still desired more; and what came of it.*

WHEN I saw my poor brother led away to imprisonment, I attempted to leap down into the Council Chamber, desiring to intercede on his behalf, or at least bid him farewell. But I found that I had no motion of my own. I absolutely depended on the volition of my Guide, who said in gloomy tones, "Heed not thy brother; haply thou shalt have ample time hereafter to condole with him. Follow me."

Once more we ascended into space. "Hitherto," said the Sphere, "I have shown you naught save Plane Figures and their interiors. Now I must introduce you to Solids, and reveal to you the plan upon which they are constructed. Behold this multitude of moveable square cards.

See, I put one on another, not, as you supposed, Northward of the other, but on the other. Now a second, now a third. See, I am building up a Solid by a multitude of Squares parallel to one another. Now the Solid is complete, being as high as it is long and broad, and we call it a Cube."

"Pardon me, my Lord," replied I; "but to my eye the appearance is as of an Irregular Figure whose inside is laid open to the view; in other words, methinks I see no Solid, but a Plane such as we infer in Flatland; only of an Irregularity which betokens some monstrous criminal, so that the very sight of it is painful to my eyes."

"True," said the Sphere, "it appears to you a Plane, because you are not accustomed to light and shade and perspective; just as in Flatland a Hexagon would appear a Straight Line to one who has not the Art of Sight Recognition. But in reality it is a Solid, as you shall learn by the sense of Feeling."

He then introduced me to the Cube, and I found that this marvellous Being was indeed no plane, but a Solid; and that he was endowed with six plane sides and eight terminal points called solid angles; and I remembered the saying of the Sphere that just such a Creature as this would be formed by a Square moving, in Space, parallel to himself: and I rejoiced to think that so insignificant a Creature as I could in some sense be called the Progenitor of so illustrious an offspring.

But still I could not fully understand the meaning of what my Teacher had told me concerning "light" and "shade" and "perspective"; and I did not hesitate to put my difficulties before him.

Were I to give the Sphere's explanation of these matters, succinct and clear though it was, it would be tedious to an inhabitant of Space, who knows these things already. Suffice it, that by his lucid statements, and by changing the position of objects and lights, and by allowing me to feel the several objects and even his own sacred Person, he at last made all things clear to me, so that I could now readily distinguish between a Circle and a Sphere, a Plane Figure and a Solid.

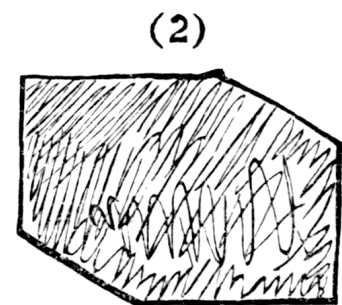
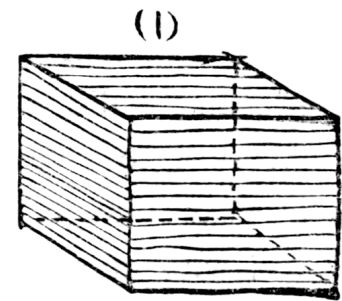


Figure 1: "Behold this multitude of moveable square cards"

This was the Climax, the Paradise, of my strange eventful History. Henceforth I have to relate the story of my miserable Fall:—most miserable, yet surely most undeserved! For why should the thirst for knowledge be aroused, only to be disappointed and punished? My volition shrinks from the painful task of recalling my humiliation; yet, like a second Prometheus, I will endure this and worse, if by any means I may arouse in the interiors of Plane and Solid Humanity a spirit of rebellion against the Conceit which would limit our Dimensions to Two or Three or any number short of Infinity. Away then with all personal considerations! Let me continue to the end, as I began, without further digressions or anticipations, pursuing the plain path of dispassionate History. The exact facts, the exact words,—and they are burnt in upon my brain,—shall be set down without alteration of an iota; and let my Readers judge between me and Destiny.

The Sphere would willingly have continued his lessons by indoctrinating me in the conformation of all regular Solids, Cylinders, Cones, Pyramids, Pentahedrons, Hexahedrons, Dodecahedrons, and Spheres: but I ventured to interrupt him. Not that I was wearied of knowledge. On the contrary, I thirsted for yet deeper and fuller draughts than he was offering to me.

“Pardon me,” said I, “O Thou Whom I must no longer address as the Perfection of all Beauty; but let me beg thee to vouchsafe thy servant a sight of thine interior.”

*Sphere.* My what?

*I.* Thine interior: thy stomach, thy intestines.

*Sphere.* Whence this ill-timed impertinent request? And what mean you by saying that I am no longer the Perfection of all Beauty?

*I.* My Lord, your own wisdom has taught me to aspire to One even more great, more beautiful, and more closely approximate to Perfection than yourself. As you yourself, superior to all Flatland forms, combine many Circles in One, so doubtless there is One above you who combines many Spheres in One Supreme Existence, surpassing even the Solids of Spaceland. And even as we, who are now in Space, look down on Flatland and see the insides of all things, so of a certainty there is yet above us some higher, purer region, whither thou dost surely purpose to lead me—O Thou Whom I shall always call, everywhere and in all Dimensions, my Priest, Philosopher, and Friend—some yet more spacious Space, some more dimensionable Dimensionality, from the vantage-ground of which we shall look down together upon the revealed insides of Solid things, and where thine own intestines, and those of thy kindred Spheres, will lie exposed to the view of the poor wandering exile from Flatland, to whom so much has already been vouchsafed.

*Sphere.* Pooh! Stuff! Enough of this trifling! The time is short, and much remains to be done before you are fit to proclaim the Gospel of Three Dimensions to your blind benighted countrymen in Flatland.

*I.* Nay, gracious Teacher, deny me not what I know it is in thy power to perform. Grant me but one glimpse of thine interior, and I am satisfied for

ever, remaining henceforth thy docile pupil, thy unemancipable slave, ready to receive all thy teachings and to feed upon the words that fall from thy lips.

*Sphere.* Well, then, to content and silence you, let me say at once, I would shew you what you wish if I could; but I cannot. Would you have me turn my stomach inside out to oblige you?

*I.* But my Lord has shewn me the intestines of all my countrymen in the Land of Two Dimensions by taking me with him into the Land of Three. What therefore more easy than now to take his servant on a second journey into the blessed region of the Fourth Dimension, where I shall look down with him once more upon this land of Three Dimensions, and see the inside of every three- dimensioned house, the secrets of the solid earth, the treasures of the mines in Spaceland, and the intestines of every solid living creature, even of the noble and adorable Spheres.

*Sphere.* But where is this land of Four Dimensions?

*I.* I know not: but doubtless my Teacher knows.

*Sphere.* Not *I.* There is no such land. The very idea of it is utterly inconceivable.

*I.* Not inconceivable, my Lord, to me, and therefore still less inconceivable to my Master. Nay, I despair not that, even here, in this region of Three Dimensions, your Lordship's art may make the Fourth Dimension visible to me; just as in the Land of Two Dimensions my Teacher's skill would fain have opened the eyes of his blind servant to the invisible presence of a Third Dimension, though I saw it not.

Let me recall the past. Was I not taught below that when I saw a Line and inferred a Plane, I in reality saw a Third unrecognized Dimension, not the same as brightness, called "height"? And does it not now follow that, in this region, when I see a Plane and infer a Solid, I really see a Fourth unrecognized Dimension, not the same as colour, but existent, though infinitesimal and incapable of measurement?

And besides this, there is the Argument from Analogy of Figures.

*Sphere.* Analogy! Nonsense: what analogy?

*I.* Your Lordship tempts his servant to see whether he remembers the revelations imparted to him. Trifle not with me, my Lord; I crave, I thirst, for more knowledge. Doubtless we cannot see that other higher Spaceland now, because we have no eye in our stomachs. But, just as there was the realm of Flatland, though that poor puny Lineland Monarch could neither turn to left nor right to discern it, and just as there was close at hand, and touching my frame, the land of Three Dimensions, though I, blind senseless wretch, had no power to touch it, no eye in my interior to discern it, so of a surety there is a Fourth Dimension, which my Lord perceives with the inner eye of thought. And that it must exist my Lord himself has taught me. Or can he have forgotten what he himself imparted to his servant?

In One Dimension, did not a moving Point produce a Line with *two* terminal points?

In Two Dimensions, did not a moving Line produce a Square with *four* terminal points?

In Three Dimensions, did not a moving Square produce—did not this eye of mine behold it—that blessed Being, a Cube, with *eight* terminal points?

And in Four Dimensions shall not a moving Cube—alas, for Analogy, and alas for the Progress of Truth, if it be not so—shall not, I say, the motion of a divine Cube result in a still more divine Organization with *sixteen* terminal points?

Behold the infallible confirmation of the Series, 2, 4, 8, 16: is not this a Geometrical Progression? Is not this—if I might quote my Lord's own words—"strictly according to Analogy"?

Again, was I not taught by my Lord that as in a Line there are two bounding Points, and in a Square there are four bounding Lines, so in a Cube there must be six bounding Squares? Behold once more the confirming Series, 2, 4, 6: is not this an Arithmetical Progression? And consequently does it not of necessity follow that the more divine offspring of the divine Cube in the Land of Four Dimensions, must have 8 bounding Cubes: and is not this also, as my Lord has taught me to believe, "strictly according to Analogy"?

O, my Lord, my Lord, behold, I cast myself in faith upon conjecture, not knowing the facts; and I appeal to your Lordship to confirm or deny my logical anticipations. If I am wrong, I yield, and will no longer demand a fourth Dimension; but, if I am right, my Lord will listen to reason.

I ask therefore, is it, or is it not, the fact, that ere now your countrymen also have witnessed the descent of Beings of a higher order than their own, entering closed rooms, even as your Lordship entered mine, without the opening of doors or windows, and appearing and vanishing at will? On the reply to this question I am ready to stake everything. Deny it, and I am henceforth silent. Only vouchsafe an answer.

*Sphere (after a pause).* It is reported so. But men are divided in opinion as to the facts. And even granting the facts, they explain them in different ways. And in any case, however great may be the number of different explanations, no one has adopted or suggested the theory of a Fourth Dimension. Therefore, pray have done with this trifling, and let us return to business.

*I.* I was certain of it. I was certain that my anticipations would be fulfilled. And now have patience with me and answer me yet one more question, best of Teachers! Those who have thus appeared—no one knows whence—and have returned—no one knows whither—have they also contracted their sections and vanished somehow into that more Spacious Space, whither I now entreat you to conduct me?

*Sphere (moodily).* They have vanished, certainly—if they ever appeared. But most people say that these visions arose from the thought—you will not understand me—from the brain; from the perturbed angularity of the Seer.

*I.* Say they so? Oh, believe them not. Or if it indeed be so, that this other Space is really Thoughtland, then take me to that blessed Region where I in

Thought shall see the insides of all solid things. There, before my ravished eye, a Cube, moving in some altogether new direction, but strictly according to Analogy, so as to make every particle of his interior pass through a new kind of Space, with a wake of its own—shall create a still more perfect perfection than himself, with sixteen terminal Extrasolid angles, and Eight solid Cubes for his Perimeter. And once there, shall we stay our upward course? In that blessed region of Four Dimensions, shall we linger on the threshold of the Fifth, and not enter therein? Ah, no! Let us rather resolve that our ambition shall soar with our corporal ascent. Then, yielding to our intellectual onset, the gates of the Sixth Dimension shall fly open; after that a Seventh, and then an Eighth—

How long I should have continued I know not. In vain did the Sphere, in his voice of thunder, reiterate his command of silence, and threaten me with the direst penalties if I persisted. Nothing could stem the flood of my ecstatic aspirations. Perhaps I was to blame; but indeed I was intoxicated with the recent draughts of Truth to which he himself had introduced me. However, the end was not long in coming. My words were cut short by a crash outside, and a simultaneous crash inside me, which impelled me through space with a velocity that precluded speech. Down! down! down! I was rapidly descending; and I knew that return to Flatland was my doom. One glimpse, one last and never-to-be-forgotten glimpse I had of that dull level wilderness—which was now to become my Universe again—spread out before my eye. Then a darkness. Then a final, all-consummating thunderpeal; and, when I came to myself, I was once more a common creeping Square, in my Study at home, listening to the Peace-Cry of my approaching Wife.