

Chapter 4

Space—The Final Persistent Frontier

“Space is the breath of art.” Frank Lloyd Wright

For clarity, the discussion about space in this book (the space in between) is not specifically *outer* space. It may be outer; it may be inner; it may be middle. Space, here, is the substance that fills the distances between and around those obvious points that quickly grab our attention.

This context presents two distinct but related features to consider and evaluate: (1) the obvious points we see first; and (2) the many, many more points that lurk unobserved. The underlying presumption—borne out by definition, science, and practical experience is that the space in between is not empty; it is replete with content and meaning. Specifically, “space” as we’ll use it in this book is any or all of:

1. the general *context* within which what we’re studying exists, that helps to define what that thing is and what’s important about it;
2. the specific *circumstance* at any given moment that affects the thing we’re studying; and
3. the change that goes into defining what we’re studying including its aesthetic, pattern, and shifting relationship to other things as they become evident.

That this space not only exists but that it is both information-rich and vital to understanding the smaller part of it that has our attention is essential to the core propositions of this book. A space we may consider is unique to an individual domain,

yet remains common to everything. That is, it is the same everywhere but not the same thing everywhere. Let's first ground the idea in a readily understandable model.

Geometry

A vivid way to set the foundation for thinking about spots and spaces is by taking a quick trip back to grade nine math class for a recap of Cartesian geometry. These concepts require no calculating or facility with numbers, and nobody needs a compass or protractor.

After getting graph paper and being told not to play with the compass because it's dangerous, the first thing that we were taught about geometry is the point. Not the point of geometry; the *point*. The tiny dot the pencil makes when we put it down on the paper. It is what everything else builds from.

Point A (spatial) point refers to a location, within a given space, without length, width, depth, area, or volume. It is, therefore, is a zero-dimensional object; nothing, really. To be more categorical, a point is not actually a thing so much as something to attract our attention.

For our purpose, a point can be any definable, discrete, and unique bit of data or information. That could be in the form of a number. More likely, even if it could be reduced to a number, a point for us will be something qualitative, including a color or hue, a date, the observed speed or location, names, times, sensations, etc.

We focus on points because (a) they're obvious, (b) they're discrete, and (c) they *seem* to be the important part of what we're working on. It's how we have been conditioned and how our brains work. We look for and attribute meaning to these points of information and then let them represent bits of matter. Matter is stuff, and stuff matters. Most people conceptualize points easily this way: they are those *things*. That is both practical and the allure of the point. It's also a weakness in our mental agility, as we'll explore later.

By connecting two *points* we get a *line segment*. The segment is what we're after because it is line segments and their more aesthetically pleasing cousins, arcs and curves, that ultimately create *shapes*. And, both literally and figuratively, what we seek points for is to develop and provide (meaningful) shapes.

Line segment A line segment is that finite part of a straight *line* which connects two specific end points and intersects all points in between. It is a unidimensional object having length but neither depth nor width and continues infinitely.

For our use, the line segment, arc, and curve represent connection among and between those points that we determine to be important. For instance, not only is a line the relationship/connection between price and volume on a revenue analysis but also the marriage between two people, the group name, etc. for other similar people, the method and duration of travel from Albuquerque to Des Moines, and so on.

It is obvious that when we consider the facts or the data or the numbers—all the same thing depending on the working domain, what we are presented with is a collection of (data)points. That, given that points are zero-dimensional by definition, means we effectively have a whole lot of nothing. But they are something to us because of the shapes that the data or the facts seem to create.

A lot of points connected by lines and arcs that close or nearly close up (forming a boundary) create shapes. Made up from many points and connections, these shapes can be complex things. Yet to us, whole shapes become relatively simple, individual things. Things, as mentioned earlier, attract our attention and are important to us. It's like an IKEA™ box: inside are a dozen distinct pieces of wood and even more screws that are individual points which all become a simple, singular shape when connected: Billy™ bookshelf.

Physically and visually, shapes occupy space and, unlike simple points, would seem to be tangible. This does not mean that they necessarily weigh something—a heart drawn with vapour in the sky is a shape that has no meaningful mass to anybody. The critical feature is that shapes have definition and so, by experience and social custom, shapes obtain meaning. When we see a particular form, even one created by imaginary (ink) lines connecting far away points called stars, we recognize and understand it—usually with a name: “That’s Orion.”

Shapes A typically closed shape is the result of the connecting of various lines into holistic, self-standing, and definable object.

When we think about and use shapes, we will refer to the recognizable or definable entities that are inferred as a simple whole by the connection of (data) points. A shape can be tangible—like a car or house; it can also be intangible like market segments and customer clusters.

Points, lines, and arcs that become shapes in two or three-dimensions (that is, Bugs Bunny™ as cartoon on celluloid or as plush stuffed toy) are what grab our attention at all times. We are genetically, culturally, socially, evolutionarily, and otherwise designed to perceive shapes. We look for *things* to see. This goes for sound and smell and taste (if you ask an oenophile) as well, in which case the sensations have a shape or form some call a “bouquet” or “nose.”

Shapes are what we hang on to for understanding; they are what we perceive. Nobody watches a movie by staring into the middle distance of the set, past the moving objects in the foreground and avoiding the static scenery in the background as well. It would be fairly hazardous to drive a car without paying attention to objects around you. Focus on the things, we're told, which sometimes sounds like, "Keep your eye on the ball." Yet for all that, truth be told, we cannot solely focus on the shapes *even while we have every apparent sense of doing just that*.

One thing purposefully left out of the earlier descriptions, definitions, and explanations of the elements constituting shape was that they all occur and have relative position within some three-dimensional extent. That extent, whether finite or infinite, is usually referred to as "a space." Or, more generically, simply just as "space."

Space Space is the boundless, three-dimensional extent in which objects and events occur and have relative position and direction.

Generally, space is perceived to be a void awaiting things to fill it, like an empty bowl. For our purpose, it's an extent that is *full* of potential ready to develop.

Space is by default the universe. That might be a little broad for anything meaningful except discussions of galaxies and wormholes. When we do ponder the distance to Betelgeuse, deep or outer space is the right scale. For most everything else, you would typically want to reduce the field of consideration a bit. A ship's space, by example, might be the dockyard, a particular wharf, a port in Norfolk, all of Chesapeake Bay, the North Atlantic, or the seven seas. It's still the same boat; the thing (shape) that is drawing our attention. Each alternative is simply an extension of the potential relevant space for that thing. The relevance of the space depends on what was being considered. And that right there is the important issue. What is the right scale of space and what is being considered? Too small and you miss options and outcomes; too large and you miss the nuance.

Context in space

The space is the *context* within which we consider points and shapes. That seems straight-forward enough, though maybe a little anti-climactic. Why should this fairly innocuous and almost irrelevant statement be so significant? ("We all know *that!*") It is foundationally important because, as I hinted earlier, we don't usually consider it—i.e., the space—despite perceiving and understanding it.

Think about a fish. It doesn't matter what kind. A rainbow trout is attractive and works well in this little thought experiment. Concentrate on the iridescence of its skin.

Think about it swimming. Think about it flopping and flailing about. Now think about it unmoving, cold, and well lit. While you were focused on the colourful scales of the trout, you almost certainly moved that fish from place to place. Each of these states is common to a different space: stream, net or boat, and grocer's display. It happened, but you likely did not give much consideration to the shift in space. After all, I'd said to think *about the fish*.

Now reverse the process and describe the fish shape or movement for a given space. Try: filleting table. Your imagination has now likely gutted and maybe even removed the head of that trout. It makes no difference whether it's a dockside shack or a processing facility that came to mind; this isn't a Rorschach. What is important is that you have just understood and made an assessment of a thing *because of the space in which it exists*.

Context, as made obvious in the aquatic example, is a critical though typically overlooked or at least underestimated part of the situation being evaluated. Except for those trained to do such things, we tend to remain focused on points and shapes, unconsciously taking in context but usually paying it no mind. As they say, the last one to notice the water is the fish.

If the context (space) is such an important part of how we take in and understand things, should we not be a little more conscious of it? In short, yes we should. You may have noticed that context is a part of most criminal trials. Say somebody puts a kitchen knife into another person in the dining room one night. Self-defense is a contextual plea when the stabbed person had obviously broken into the house (jimmied the window) and was armed (gun with victim's prints on it) as well. On the other hand, a crime scene that is an incongruent mix of wine, canapés, and broken family pictures, certainly speaks to a much different situation.

Context is space; space is context. But, as the earlier examples show, space—or context—is much more than just an empty vessel to contain the points and shapes on which we are focusing.¹ In fact, it contains everything and the potential for anything and any event. We are just not perceiving it all—yet. Maybe we don't know what we're looking for—or at.

¹ I don't know if you've noticed but this seems to be a lot of talk about nothing. A point is a zero-dimensional object within a vast emptiness of its space. Maybe the existentialists are right.

“The universe is unbounded, yet we make boundaries because we need to feel secure, although nothing is secure.”

Dr. George Kanabele

This idea that the shape and the space are a unity is neither new nor unique. The Chinese yin-yang symbol of shifting light and dark is one example of space and shapes needing each other to be purposeful. Context is elemental to properly understanding any *thing*. It could even be that *most* of the information about a thing itself (a data point, object, action, or what have you) is in the context.

The next section more firmly seats the notion of objects and space, or context, together as a fundamental means of understanding points, shapes, and the spaces in between.

Greater sums: Gestalt theory in brief

Gestalt theorists and psychologists take their descriptive name from the psychological theory first put forth near the beginning of the twentieth-century. The word *Gestalt* is German, meaning form or shape. As a reaction to another, reductionist theory that proposed all things were absolute and could be reduced to their component parts, Gestalt theory went completely the other way. Sometimes known as the synergistic theory, it postulates that the sum is larger than the parts and the parts are inseparable both from each other and from their *context*.

The laws and principles of Gestalt are most profound and easily understood in the context of the visual frame. So visual art and architecture tend to be permeated with a sense of the gestalt. That said, both symphonic music and the combustible sonic production of a horror movie soundtrack are every bit as much a gestalt as anything visual. One way or the other, as the German word suggests, the critical underlying feature is that it is a whole. The idea is that the elements are not merely better because of each other, but, in fact, derive their meaning and impact largely due to one another. This becomes apparent quickly in the Gestalt principles.

There are, arguably, six common Gestalt principles—although some appear to dominate more attention than others.² We’ll make a quick consideration of them to better understand what’s behind the notion of exponentially increasing perceptual value of points and shapes that results from the context in which they exist.

² The six principles that follow once figure-ground articulation has been established, are: *Proximity, Common fate, Similarity, Continuity, Closure, Good gestalt, and Past experience*. Some would also include a principal of *Symmetry*.

The first element of the Gestalt, although not a principle *per se*, is the articulation—or separation—of figure and ground. Quite simply this identifies the obvious fact that we perceive *figures* as the object of attention and the remaining *ground* to be the space or context in which the figure exists. Most adults have an intuitive sense of figure and ground. We know that the objects on the page or canvas are the figures while the colour or scenery or setting is the (back-)ground. This does not work so easily if the art you've gotten up to look at is a Jackson Pollock, but—and I'm no expert—chances are that there is even figure and ground in abstract painting.

Some of the principles have to do, generally, with patterns and *how* we tend to perceive individual points to be a whole. The Gestalt principals that are most associated with pattern understanding are *Proximity*, *Similarity*, and *Continuity*. The sometimes principle of *Symmetry* fits as well. *Proximity* at its simplest is nothing more than, “if they are close together, they are a group.” *Similarity* says that those things that are similar are a group. This can refer to shapes, colours, loudness, or any other attribute of points and shapes. *Continuity* is a little more complicated although yet a simple principle. In essence it suggests that there are natural continuations for objects that affect how we perceive them. For instance, where the left half of a face is drawn, we perceive the imagined but natural continuation of the right side. Most illustrations of these principles are made for visual things like designs and drawing. But since our goal is to connect these principles to the actions and decisions of daily life, how about a slightly different tack?

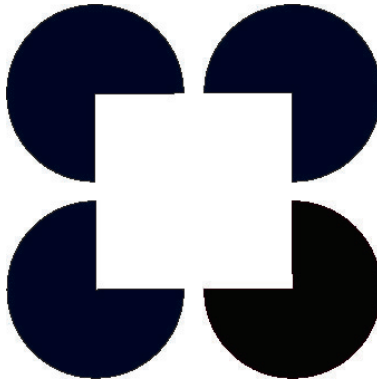
Within a couple that love each other, flowers are a good form of implicit communication. For argument's sake, let's say that flowers given from one spouse to the other say, in one way or another, “I love you.” Were it only this simple. But it's not.³

Consider a bouquet of roses. First off, these flowers are only a “bouquet” of roses, when they are (typically) twelve cut *roses* often of the *same colour* (*Similarity*) all *together* (*Proximity*). If that dozen roses appears once a year on February 14th, not only will there be no surprise, after a while there will be an expectation (*Continuity*). Miss a Valentine's Day, breaking the pattern, and there could first be hurt, indignity, and suspicion followed by a required explanation. Because *Continuity* is about how separate points and separate objects match up, *timing* continuity would be the principle at work when the roses appear the day after either a particularly nasty argument or an amorous evening before. They get connected. On the other hand, try breaking established patterns by infrequently and randomly bringing home or sending the flowers—especially

³ For any woman reading this book, you are welcome to move past the next paragraph because you have an innate understanding of the many contextually determined meanings of flowers while the men reading this will have, like me, taken a long time and much experience to even begin figuring it out. Alternatively, the knowing snicker or two you get might make the example worth reading.

after a long business trip. This time, the *Proximity* connections lead to uncertainty and suspicion. That's never a good thing. A dozen roses, broken apart and strewn willy-nilly about the house suggest debris from a mild, highly localized hurricane or a nasty squabble—perhaps after an insufficient explanation as required above. That same bunch strategically scattered about only a bed or bedroom carry an entirely different meaning (*Proximity*). These twelve roses used like bread-crumbs to guide a lover down a path is romantic for reasons that go well beyond the gestalt. But they become a path by virtue of their *Proximity*, *Similarity*, and *Continuity*.

Our brains like tidy bundles nicely wrapped up with bows. So the brain tends to connect separate and distinct things together. It also tends to complete things to create finished wholes. This has a lot to do with our preference for stability and certainty, and is why ambiguity challenges most people. What is at work is the Gestalt principal of *Closure*. We prefer patterns that are closed. Again, a visual example is common and simple. In this case, it's worth employing. In the illustration below, most people will see a white square on top of four circles rather than four three-quarter circles grouped together—*despite* the fact that *there is no square*. We close the shape of a square on our own.



This Gestalt principle aligns tightly to other psychology that arises out of our desperate need for things to be complete and fully understood. A mental torment that plagues some people is the unknown end, whatever it might be, which goes by various names including “unfinished business.” This is why stories tend to wrap everything up in a *dénouement*. There is a reason why (pop) psychologists talk about closure to their troubled patients/audience members.

While these preceding Gestalt psychology principles closely correlate to the ideas of the spaces in between, the last principles of *Common fate* and *Past experience* are even more relevant to the practical activities of daily life. They embrace qualities that help us orient objects within a particular context. Because here we are trying to use all ele-

ments of point, shape, and space to understand what's really going on, we draw most on these two principles *in the moment*.

The principle of *Common fate* says that things that move together are the same or are part of a group. Schools of fish and flocks of birds in motion are vivid examples of common fate. In the office cafeteria, you can tell who is and who is not part of the clique by watching individuals' movements: the inner group moves together tightly and outliers loosely follow. It is important to bear in mind that common fate is an assessment *at a point in time*. Consider commercial consortia, vigilantes, and military alliances. Whether it is individual businesses acting to the benefit of the group (a joint venture or participants in a long value chain), concerned households tired of ineffectual policing of petty crime, or the nations that contributed to the quick liberation of Kuwait under the auspices of the United Nations in 1990-91, we group these individual objects because of their common fate. Of course, these examples are obvious if for no other reason than because at least the latter two have official names. Naming is one proof that the Gestalt principle of *Common fate* is a common practice.

Common fate is another way to say that we categorize, the ugly side of which is to stereotype. Consider how lawyers—real, barroom, or public school—use this principle of (guilt by) association. The accused appeared to be acting toward the same end as others who were doing something that was wrong; therefore the accused is part of the group doing something wrong.

Examples closer to home for most people would include how oncoming traffic is grouped because it moves the same way generally at the same pace. Everyone's ultimate goal is a little different than everyone else's and nobody in the group is really connected. Yet we categorize them for the moment by this principle. In other ways we use this *Common fate* principle to understand and group points and objects. Consider a simple categorization of data: those that indicate growth *v.* those that show decline. We're categorizing by apparent *Common fate* here whether it's appropriate or not.

The last, important Gestalt principle to illustrate how we understand points, shapes, and spaces—and even more importantly, *how we accelerate that understanding* of the gestalt is experience. The *Past experience* principle transparently says that we tend to group things as we have seen them grouped before.⁴

Past experience is easily enough understood without explanation. My daughter learned “hot” by (monitored) experience with what a hot stove element felt like. After that, she was pretty good about not going near the stove elements. She learned from that experience on two levels. At the practical and domain-specific level, she learned

⁴ The principle probably appears elsewhere without the internal redundancy, as I'm not sure that the addition of the word “past” adds anything—even gravitas.

that the (red) coil on a stove was hot and that hot hurt. So don't touch. As a general rule to classify across domains, she learned that hot could be unpleasant were it coming out the water faucet, and so on. This is, of course, language development. But that's OK because language is an area where *Past experience* is a key part of how we understand.

Apparently, infants have an innate ability to recognize and comprehend unique phonetic sounds that effectively represent all the sounds made in all the languages on the earth. Children focus on the set of sounds they hear regularly, which represents the primary language for that child. Other sounds atrophy slowly so that the child's learning can more intensely focus on that one language. Beyond basic sounds are emphases in words and sentences, which are different among languages. The point of this bit of information is that the *Past experience* of sounds and their construction helps define how a lifetime of language learning will be founded. Adult language learners, who begin with specific *Past experience*, tend to sound foreign in the new idiom because they apply inappropriate *Past experience* (of emphasis and information) to the structures of the new language being learned.

This *Past experience* extends to writing and form as well. We come to expect certain patterns, and can be thrown off when they don't appear as expected. The gestalt here is particularly culture bound. In North America, the telephone number pattern is: three digit area code then a seven digit telephone number sequence broken into a three-digit exchange and a four-digit phone number. The rhythm of the phone number is thus: 3, 3, and 4. When we hear a sequence like that, or even just the three-four sequence, based on *Past experience* we will without thought recognize, group, and classify the point as a telephone number. Just try to change that sequence to something like 3 (area code), 2, 2, 2, 1. It creates dissonance and confusion almost every time. The Gestalt is powerful.

Eliminating “static” cling: dealing with movement and change

Points are the elemental things on which we focus. In real life, points are actually facts and data as well as objects. They are what give rise to our understanding and underwrite our analysis of this world; it is upon them that we make decisions and take action. So they are pretty important, these points, and we count on their stability and permanence. This tends to turn them into static items of information, static places in time, or static conditions or states.⁵

The apparent condition of constancy may be one feature of points and the shapes

⁵ A static condition or state is when we say that the water is vapour, liquid, or solid at a given point. But, as we know, that can change.

they create that gives us comfort. Continuity and stability is valuable to us in general. But the idea seems to contradict experience and common wisdom, which suggests that we are attracted to motion not stillness.

What really attracts our attention is not the stillness or the movement, but the *difference*. That is, within a generally still space we are attracted to movement. Conversely in an environment of continual movement, it is stillness itself that attracts attention—probably because it seems out of place. I don't know. But it's relevant because life moves. So our understanding of points and shapes of every sort necessarily has to encompass the values of both movement and stillness.

What is even more important to know about the characteristic of a point being static is that the very condition of being unchanging means that *nothing is happening at that point*. If nothing happens at or among still points, then it is logical necessity that movement and change must be happening elsewhere. Obviously, the action is in the spaces in between the points.⁶

Shape and space and distance

Looking at spaces instead of points or shapes in the abstract setting of math and psychological theory does not lend itself to practical application. So maybe a quick survey of some common places where points, spaces, shapes, and change play out harmoniously will kick-start ideas for applying the concepts.

Chess is not the least abstract of games or hobbies. There are 64 squares comprising the chessboard matrix and 32 pieces split evenly between two players. Half of each players' pieces do exactly the same thing, while the rest have various distinct and limited movement capabilities. As a game evolves under these structured conditions, there are in excess of a billion possible layouts on the board. Yet chess masters and even rank beginners can grasp the situation on the board *at first glance* at any point in any game.

The difference in how well experts as opposed to novices assess the chessboard has nothing to do with the pieces. After all, the pieces don't have secret levels of capability revealed with increased skill. This isn't Mario Brothers™. It has everything to do with what's called the "shape" of the board. That is, how the two sides' pieces have been played and moved as a whole, giving the sides more or less strategic and tactical strength *viz.* the opponent. That shape has less to do with the individual points (i.e., the pieces that are there *or* absent) than with their situation. So the intelligence on the board is in the spaces.

⁶ I don't want to take anything for granted: this is the metaphor that we'll be riding like a waterlogged camel in the Sahara.

Shifting to a much more prosaic subject area, think about insulation. It takes many forms from long Johns to Styrofoam™ to Fiberglass Pink™ and all points in between. Insulation is used to keep things warm or cold, and to soundproof and protect, among other things. It works the same way in all cases. The insulative material is doing only one job: it is trapping air or water and holding it.

For clothes, the insulator is blocking wind and trapping air as a protective layer. The magic of a Neoprene™ wetsuit is that it holds the same layer of warm water in the same place—between skin and water—where it’s allowed to remain warm from body heat. Even for windows the insulation is not the glass. Glass stops the wind, but providing the insulation value is the space between the panes where a layer of air or gas mediates exterior and interior temperatures.

Space helps keep us insulated from other things—like information—as well. One extreme form of information insulation is when a leader, like the President, is not fully informed of an action. I understand this happens, at least in the movies, to create “plausible deniability.” This is a state of genuine, honest ignorance to avoid lying later if things go badly. Less extreme and more possible for most of us on a day-to-day basis is the guidance to get a little distance from the situation.

In the thick of any circumstance, we have a tendency to get lost in the demands and immediacy of the moment. We tactically respond to ever more detailed information as it arrives so rapidly and narrowly that we—or others advising us—suggest stepping away for a little perspective. The goal is to move away from the *data points* to see the *shape* of the overall situation and respond more thoughtfully. The new/different perspective isn’t just about rest and a fresh set of eyes: it’s about looking at the whole shape—*spaces included*.

Patterns in the noise

Patterns are one way our understanding of data and information is manifested. We identify patterns among points and within shapes. It is such an important part of intelligence that a substantial part of the underlying tested capacity of most IQ tests is some form of pattern recognition and application. From linear dot-dash Morse code to a multi-type tartan (different colours, line weights, line direction, etc.) and beyond, the perception of a pattern requires that we put the points into a relevant space and find shape among and within them.⁷

⁷ Uber-sceptic, Michael Shermer, has a view that because people’s brains are “belief engines” we have within us advanced pattern-recognition capabilities. He proposes that although we can recognize patterns, we’re generally not so good at determining their meaningfulness. We tend to both see no pattern where there is one (false negative) and see patterns where there are none

The dot-dash sets that represent individual letters in Morse code are ever so slightly separated from the next set to distinguish letters, which are in turn separated by larger gaps to signal breaks between words. Not doing so would make the stream of individual points (the dots and dashes) nothing but indecipherable noise. So it is, in fact, that space makes points comprehensible to give meaning to the code.

Here's an example of a pattern always good for private talk with your spouse or friend: the age breakdown of your new acquaintances' children. After getting past whether the wedding was before or after the first's birth (and conception when you're feeling particularly catty), a more pedestrian light dawns. You were introduced to the sixteen year old that came whizzing by looking for car keys. The fourteen year old passed you on her way to the kitchen for a Pop Tart™, not bothering to acknowledge anyone or anything but whomever she was on the phone with. Later, several eleven year old boys, including the one that belongs to your friends, marched through the back yard carrying gardening implements and calling the neighbour's cat. It all seems like a pretty normal set—if you have to have three. But when the toddler arrived home with grandma, the conversation for the drive home got its jolt of excitement.

There's nothing odd about children or a large family. It is not infants or teenagers specifically that generate discussion. The oddity here is the space between the children. The pattern established with the first three is consistent and what we might call normal. Had there been one or two more between the eleven year old and the three year old, that too would have completed the normal—albeit extensive—pattern and been acceptable without note. The conversation would have been about the sheer number of kids, but that's about it. Instead, what captures our attention, for at least a little while, is the big gap between child three and child four. Was this an accident, we wonder. Did they adopt? What was it all about? The information and intelligence informing our conversation and capturing our imagination is thus not in the points themselves (the children *per se*) but in the spaces in between.

Language and communication is another common but excellent place to find the mix of point and space contributing to full meaning and impact. Not only is it ripe with examples, but the correlation among the parts is plain. The points are words, the spaces are spaces, and the meaning being derived from their conjunction is the fullness of the thought being expressed by the words. In most communication is an obvious text as well as a less obvious sub-text; the *literal* meaning and the *actual* meaning of the communication come not only from the actual words but the tone, structure, and other features of the points and spaces.

(false positive). This he refers to as “patternicity.” Shermer’s distinction is meaningful, which is valid. For the purpose at hand though, we are more concerned with recognizing and developing the ability find multiple patterns and see possible meanings. Proficiency is the goal.

An old Steve Martin bit has him talking about writing he's done. At one point, referring to a particular story, he says, "It's when I first started using *verbs*. My stories really brightened up after that." I raise that quotation primarily because it makes me laugh. It's also appropriate here if we stretch to consider nouns (people, places, things) as points because of the obvious alignment to the earlier descriptions to what points and lines are in space: static items describing a position in time, space, etc. Verbs are what makes the sentence or language move. While other parts of language add colour, depth, and nuance, it is the verbs that give meaning to what is being said. Look at the following points, in order.

child

balcony

sidewalk

These are merely three common nouns that need to be connected. How they get connected at those spaces between them is what creates a sentence, a thought, and meaning. The variations are as broad as the reasonableness of the circumstance and the language allows. Two options are, the obvious:

*The **child** was told not to go on the **balcony** or she could fall to the **sidewalk** below.*

and, the both more gory and anticipated:

*The **child** fell off the **balcony** and lay still on the **sidewalk**.*

But equally feasible might be:

*The **child** looking from the **balcony** clapped happily at the colourfully painted **sidewalk**.*

Same points (nouns) with different connections in the spaces in between changes the feeling from sorrow to relief. Moving the points would open up even more possibilities. All this potential solely because of what's in between the "important" points that tend to dominate our focus.

Spaces in between affect language probably more in conversation than in writing. There is no doubt that the tone of a voice contributes to how we perceive what's being said and, without knowing the speaker and judging on that basis, what it means. Never mind when our preconceptions about the speaker or the contextual setting is brought into play. The style of speech—pace and phrasing—is critical. These factors appear in all spoken communication, including song. It appears in the speech of great and petty orators from Dr. Martin Luther King Jr. (or President Obama, if that's a fresher cup of tea) to the sideshow pitchmen and television evangelists. For actors on stage, voicing

of dialogue is fundamental to defining character. And Frank Sinatra was widely lauded for his trade-mark phrasing of song lyrics.

The spaces in between words and phrases—or their absence—are a key means of conveying a meta-message. The meta-message, simply, would be the larger message being delivered by the speaker beyond the straight-forward meaning of the words being used. Sarcasm, pleading, anger, etc. are all potential meta-messages of any given set of words. Irony is the *ne plus ultra* example of how the right words can give the wrong message. So if, as we all know, the same dialogue (words strung together in a specific order) can be sympathetic or snide, then the meta meaning is not in the words, it's in the pauses and phrasing. That is, not in the points but the shape create by those pesky spaces in between—again.

Music is a realm where spaces are critical and themselves can change the sense of the piece. Rimsky-Korsakov's *Flight of the Bumblebee*, for example, is a flurry of rapid notes that tests the dexterity of the players who paint an auditory pastiche of sound conveying the frenzy of that fuzzy, little, implausible black and yellow flyer. But even within the many runs are rests that build a bit of tension and create the sense of the work that little hive dweller is doing.

Those many eighth, quarter, half, and whole “points” that constitute the score of what we hear can be played with more or less space between them. *Staccato*, for those non-musicians, is having each note played distinctly without rubbing up against the preceding or ensuing notes. It is the style being played when notes sound like the persistent report of a machine gun firing. It gives the sound a harder, more precise feeling. A contrapoint to staccato would be *glissando*. In French *glisser* means “to slide,” which is precisely its effect. The notes slide into one another up and down the scale without break or pause. This creates a smoother, dreamier melody.

It would be nearly impossible to achieve the auditory shape of either staccato or glissando using the other method despite the same notes being played in the same sequence with the same emphasis at the same tempo. The difference is the possibly ever-so-slight gap between the notes that makes one a series of distinct units and the other a connected blur of rising and falling tones. So, in a refrain that's getting purposely old, the shape and meaning—in this case, the emotional impact—is in the spaces in between them.

We could go on and on through art and science, among different disciplines and endeavors to remake the case in varying fields: the points are very important but are merely where understanding of their meaning *begins*. Much of the value of the points,

and the shapes that they make, is inherent in the space they occupy and where in that space the points lay. Connecting the points is what makes meaning for us and nowhere can this happen more easily than in the abstract environment of data analysis. Connecting data and information well distinguishes successful choices and decisions from mediocre ones.

Data points are readily obtained through research and observation. But they are like a wasteland of rock that may be formed into roads, walls, dwellings, or any other number of structural shapes. Their position in the space they occupy, and the availability and likelihood of the connections between them is what tells their story.

Ultimately, the spaces in between constitute the environment or context that the points and shapes occupy. While the points may be the same, their story may be different depending on the environment, just as the mental image of a fish changes when the background context changes. Context is, therefore, critical for practically every understanding of anything. Which is why your boss or spouse or parent should neither simply ask for “facts” or “data” or “input” without a contextual frame. Nor should (s)he get upset with the question that you’re obliged to ask: “How [or where] is it you want to use it?”

The space changes everything: being aware of it is important. That is where we’ll go in the next chapter.