THE DERIVATION OF SPACE*

Eugene T. Gendlin
University of Chicago

This article is for Edward Casey. I write in the terms of my own philosophy about place and space as well as many other topics. I contrast two ways of thinking. We need both, and I will show exactly how we can use both. One way of thinking is narrow; the other much wider. Each is a way of thinking about what really exists, but the wider way can explain the narrow one, and can show how the narrow one is derived. I will derive it.

The narrow way assumes that everything exists in the space that has things in it. That space seems to be the reality in front of us and all around us. According to the narrow way, only what is in that space really exists. The wider way begins from *the activity we are*, the process, the happening, not just things that are before and behind us.

1. LOCATION SPACE

The space of located things is familiar. In our Western culture it has seemed to be the original reality, what is "really" there. To exist has meant to fill space in some location.

This space extends to the galaxies. Each thing seems *located* in it. Something that fell off the table must now be down there, even if we don't find it. The old book is still there, on the shelf where I put it years ago, unless someone moved it. Now I want to look something up in that book. So I go to that shelf. There it is.

The located things are *there*, that's quite true; but every "there" is a *there from here*, seen and heard by someone here who points from here to there. The space we are examining is the gap between a *here* and a *there*.

The space of locations is a spectator's space. It is perceived but then the bodily *process* of perceiv*ing* is dropped out, so that only the perceiv*ed* things seem independently real. If that were so, there would also already be the space between them. But the process of perceiving is what is generating the percept*ions*! They are wrongly considered to exist by themselves. 1

The dependence on the perceiving observer has long been well known. But the existence of this space was so thoroughly assumed, that *it seemed only a famous problem* that

---

* This article appears in Cruz-Pierre, A. and D.A. Landes (eds.) *Exploring the work of Edward S. Casey: Giving voice to place, memory, and imagination*. Bloomsbury Academic. 2013.

1 The process was long thought to be "transparent," just an "-of" of the things. Only the content of consciousness was considered real.

space depends on an observer or observers. The mistake really was to put the product before the process that is generating the product. We will change this assumption and reverse the priority.

Quantum physics is the only science that has rejected the old concepts, although without providing new ones. Using only mathematics and experimental operations, physics finds that the observer-space does not exist. *Well, of course it doesn't!* There would have to be only one observer.[2] More importantly, we and everything else would exist only in observer space. But we and the things don't exist only as observed from outside.

Sometimes we view ourselves as if we were "really" objects. Many people assume they are just physiological structures in space. But those are cognitive conceptual structures and perceptions which are being generated.

The located things don't exist by themselves. Even in physics the particles don't exist by themselves. Only their being generated and re-generated can be calculated and predicted. But the location space is still assumed in most other sciences and by most people. Most of our concepts are about structures in space. So we find ourselves falling back into assuming locations even when we don't want to. But with the wider kind of thinking, *we can have a different kind of conceptual structure.*

Let me examine location space a little further. It is a featureless space and assumes a featureless existence. Something exists if it fills some space. This featureless *existence* and this *space* are the same thing.

In modern symbolic logic one asserts that a thing exists by saying: "*There is an X such that X is* . . . " (followed by a statement of what it is). All the content is in the part of the formula that tells the "such that . . ." The assertion of existence is featureless, nothing but "there is an."

What "is" seems to be what is located. To continue just means is is is. If it continues, it fills successive time positions, now now now. The is is is and the now now now are located positions. There is no organic continuity between them. The continuity of generating a process is dropped out in favor of "relations" between separate things. But relations are not events.

When we assume the separate things first, then each seems to exist and fill a space of its own. To exist seems to mean filling a space that has no features. This space is just the gap between the separate things.

In the wider order we *live, act, and think with* an implicit intricacy, not only with what occurs explicitly formed. A process does not reduce to is is is and now now now, although we can derive those from it. A process is not only the formed occurrences that appear before us, not even when they are newly differentiated.

It is not a process even if the nows are stretched to include a little past and future (in

---

2 Of course we do need one space so we can find each other in one world, and we use the sun as a fixed point.

Husserl's way). Even with the term “anticipation” we still place ourselves at some position in the is is is. But a process is something more.

Terms like “unfolding”, “emergence,” “background,” and “implicit” have become common. But most people still consider them vague ideas with which one cannot go further. I offer a detailed conceptual structure *with precise concepts that can connect to an implicit kind of order.* These concepts will enable us to derive and go beyond location space, among many results of a wider understanding.

I need to introduce three further developments. I will explain them as I go on.

Firstly, because bodies *are* body-environment interaction, therefore new forms are generated *immediately in* the environment. It is not the case that what happens at a later time must be composed of the same units as existed at the earlier time. A different kind of concepts can explain the continuity across novel developments.

Secondly, in the living body the seemingly “lower” micro processes have the “higher” perceptual and cognitive processes *implicit* in them. I will offer precise concepts for how something implicit functions.

Thirdly, the empty space derives from patterns, from communicating with seemingly simple motions and *just visual and just sound patterns* like language, art, and music. You wave to the people coming up the walk and they wave back. They know you are not reaching for something. Humans also make new things by moving just a pattern onto a thing that does not have that pattern from itself. When one moves just a pattern, one ignores everything between, as if it were empty space. But the patterns are not actually simple.

2. BODY-ENVIRONMENT INTERACTION: IMMEDIATE NOVELTY

The concept "body-environment" says that we are always *part of* the environment, not that we have only perceptions of the environment. This much has recently been widely agreed on. We can go further.

Immediate novelty

Merleau-Ponty described a bug whose legs were cut, so that it walked in a new and more complicated fashion. Similarly, I observed an ant on my fuzzy rug, walking in a complicated wiggly way that was obviously quite new to the ant. In these examples we see that a new and more complex process can form immediately. We can explain it. Since the organism is always already part of the environment, the previous organization comes out in a new way in a changed environment. The ant doesn't gradually develop a new walk, doesn't first have to walk in its old way – indeed it can't. Nor does it need random unorganized motions from which to select a new walk. If it walks at all, it will walk in a new way. If there is a change either in the body or in the environment, a newly organized way happens *immediately* (unless the change has killed the organism).

The new walk need not be a lesser part of the old walk. It can be more complex. Now the ant rebalances from side to side as it moves forward. What had been a much simpler walk occurs in this new way because the ant *is* an interaction with the new environment. Similarly, for example, if we fall into water, our walking turns into much larger thrashings.

The point is: *Because* an organism is environmental, therefore it happens directly into the environment. In a changed environment it can only be different.

The theory of evolution, an example

In the old theory of evolution anything new had to be constructed out of existing forms or random accidents. Billions of "mutations" were required for something new but these have not been found. The theory is not universally believed, but it instances an assumption that underlies the usual concepts, that anything new has to be composed of already-formed parts. Now we can propose a better theory. In body-environment interaction a change can immediately be *newly organized*.

Of course a new process comes from what existed before, but not from the formed units. A process is a more intricate continuity. We call it "carrying forward."[3]

In the wider kind of thinking we include something implicit and the continuity between this and the new occurrings that are being generated.

We will see as we go further that the universe exists implicitly as well as implying ever-new occurrings that carry it forward.

---

3 See p. 40 of my *A Process Model* (1997), as well as Gendlin 2012a and 2012b. See also "recursive" in Stuart 2010.

3. IMPLICIT ORGANIZATION

We can go another step further: What we mean by "embodied cognition" is not only what occurs, but also a great multiplicity of implicit events that are not separately occurring. The many implicit events imply one further occurring, and enact it if the environment permits.

Embodied cognition is more than old or new formed things and parts. It is re-generating the formed things and parts.

Examples of implicit organization

To think with unfolding, emerging, implying, and occurring involves a more intricate conceptual structure. Let me discuss some examples:

Consider action or ***behavior.*** We *could* act in many ways with each thing. I could move that broken chair or I could carefully try to sit in it again. I could chop it up for fire wood, or I could just leave it there. I could take that book down and look up the spot I want to see. In the laboratory we could perform one of many known operations or try out a new one. Each object "*affords*" us many possible actions, as Gibson (1966) said. In my way of saying it, we always have *many action possibilities*.

But while the objects are spread out before us, let me point out that action possibilities are *implicit, not spread out before us*. And every possible action also involves a host of detailed circumstances that are not spread out before us.

How do we *have* this familiar "what we could do"? Shall we say we *know* it? Yes, but this is an odd "knowing," not something in our think-space, rather, an innumerable number. Shall we say we *feel* them? Yes, but it is a nameless "feeling," so much at once and changing all the while.

No common word says how we *have* our possibilities. Whatever words we use to talk about it will have to mean *this* familiar way we have them.

The implicit possibilities and their circumstances are intricately organized. Every action changes whether and how the others could be done. Some can no longer be done but some are new possibilities. Any single action is a change in other possibilities, but each is a different change in them. Every possibility is a cluster of changed possibilities. An action is not only what occurs, but also a cluster of implicit clusters, an implicit intricacy.

Behavior happens in a space, but it is a *filled space.* Any actual behavior happens in this implicitly organized space.

The possibilities are not separate next to each other; rather, they are implicit in each other. They are not merged but have a very precise organization. What would actually occur is implied very precisely. This kind of organization is more organized than side-by-side things can ever be. Anything enacted emerges very exactly formed.

Language is another example of implicit organization. The several hundred thousand words of our language are fixed, but each has a great many different uses. These happen in phrases and sentences with other words. We have the uses implicitly, and can imply a new one.

When we are about to say something, we don't yet have the words. We have what we want to say -- implicitly. Unless we have prepared the words in advance, they come as we speak. We speak directly from what we want to say. The words come grammatically arranged and they usually say pretty much what we wanted. But if we find that we were misunderstood, we go right back to what we implicitly want to say, and let fresh words come to say it.4

We could not act or speak without the implicit intricacy of possibilities and what we want to say. Implicit intricacy is more precise and has more organization than separate units can provide. The conceptual structure I have discussed here can connect with the implicit kind of organization.

4 Once in a while the words don't come and it feels almost painful for some minutes as the language rearranges itself in the body. But no wrong words come either. The body implies what we want to say.

4. RECIPROCITY: HOW THE ANALYTIC RETAINS ITS POWER AND ALSO DEVELOPS

The narrow way of thinking consists of separate terms with logical relations between them. An analytic layout can help us immensely. Distinctions and separations enable us to do more and more in our lives, as well as to create the ever-changing technology without which seven billion of us couldn't live on the planet. Analysis creates separate entities before us and relates them clearly. We cannot do without this. An analytic layout carries our whole situation forward.

An analysis consists of a fixed set of terms. If we change a term in one spot, we must change it in every other spot. And since all the terms are logically connected, a change in one term necessitates changing the others. An analysis creates logical consistency, a great power which brings logical implications and clarity.

But the clarity which an analytic layout brings lies not only in the layout before us. It has an effect in the body. It brings an implicit whole-bodied ***understanding***. "***Aha!***" we say.

If we turn from the layout to the implicit understanding which it brought us, new steps of thought may come, which could not have been deduced from the layout itself. From the bodily understanding we may think in a new way. Then there may be new facets to lay out. And if we succeed in an improved layout, it can bring us a new "aha!," a further implicit understanding which may again give us new facets for a still further layout. Analysis and implicit understanding expand each other reciprocally. I call this "reciprocity."

We can allow analysis and implicit understanding to expand each other by alternating our attention between them. I call this "fresh thinking."

Fresh thinking is not at all illogical, since it generates ever new logic with newly emergent terms. Its continuity differs from the continuity of a single logical analysis. That is the kind of continuity I call "carrying forward."

Carrying forward is the kind of transition that Fodor (1974) examined in trying to define how science progresses from year to year. He found no logical series across the development, and that led him to reject the old idea that more complex sciences can be reduced to simpler sciences, for example organic chemistry to inorganic chemistry and physics. Fodor showed how science develops ever new specialties with new terms and characteristics. Where there were three terms, now there are thirteen, all of them different from the earlier three.[5]

With reciprocity we can employ the powers of both analysis and implicit understanding. Let us not make opposing ideologies of them. They inherently involve and expand each other. We can deliberately adopt the development that Fodor has found, and we can make concepts from this kind of continuity.

---

5 The development brings vastly greater insight, but it does not necessarily incorporate every insight, implication or advantage of an earlier analysis.

5. HOW OCCURRING AND IMPLYING FUNCTION

What occurs is always both explicit and implicit. The implicit happens only in an actual occurring, but the actual occurring changes the implying into a further implying. A whole sequence of occurrences is always implied, but an actual occurring changes the implied sequence.

Implying and occurring happen at the same time which they generate. A new occurring generates a new present time. Implying exists only in an actual occurring, but the occurring is a change in the implying,

Existence is implicit and implies and enacts the next explicit occurring. So existence can be called an “explicating” process. It does not consist just of is is is units. Occurring does not exist alone. It carries implying forward. The continuity of carrying forward happens within occurring, not only with logical relations between separate terms. But we can generate many separate terms and logical analyses from occurring and implying.

Regenerating the now-functioning past

The explicating process generates a more intricate kind of time. Occurring generates time. Because what occurs is new, therefore it has generated a past for itself. The past is now not what it was, not merely moved to a different position. We grow old not because time passes; rather it passes because of the changes which occur. Happening is real and makes time.

By *generating* a new occurring, the organism has generated a past for itself. The past functions implicitly in the present, since the present would not be what it is if the past occurring were different. But how the past now functions depends also on what is now occurring and regenerating the past. It does not now consist just of unchanged events that are merely moved to a different position on a line.

The present occurring generates time by generating present events so that they have a (new) past. The new occurring therefore has an implicit record of its past, whether or not there is also someone's conscious memory. The present occurring changes how the past now functions.

There is also a future that functions in the present. This future is not what will be present and then past, just not yet. Those are only positions on an observed time line. The future that functions now consists of the real but implicit possibilities and circumstances, as I discuss in *A Process Model,* Section *IV-B* (1997).

6. THREE PROCESSES IMPLICIT IN EACH OTHER.

Gallagher (2005) offers a breakthrough by showing that our bodily micro processes can be directed by our perceptual and cognitive processes. Behavior cannot be accounted for by physiology alone. Nerves, muscles, circulation, and digestion can act in accord with cognitive rules. He writes:

> When in the context of a game I jump to catch a ball, that action cannot be fully explained by the physiological activity of my body. The pragmatic concern of playing the game … even the rules of the game … may define how I jump … (142-3).

I can offer a further account of this. Organisms, even single cells, are enormously complex even without perception. They happen directly into environmental interaction and did so for millions of years before perception and cognition ever developed. In humans the micro processes still happen directly into the environment, but now they implicitly contain perception and cognition.

Only if we clearly understand and distinguish cognition, perception, and micro processes (see my *A Process Model* IV-VII [1997]) can we then also understand exactly how they are implicit in each other and cannot happen separately. Cognition and perception always occur as part of micro processes. For example, we cannot speak unless the muscles of the tongue provide the sound of “d” and “s.” To have human emotions the heart rate has to increase. To perform this, the whole language and all our situations are implicit in the micro processes. The bodily processes are never without implicit perception, thinking, language, music and art.

If we attend directly to something we have implicitly, we can be in a place that is grounded in our much wider actual body-environment interaction, and we can think from there.

When we first form concepts from something implicit, we don't yet know what that something is, so how can we know that what we think at first is not what is implicit? We can know because the implicit stubbornly responds with “no, nothing budges.” It does not carry forward — until at last it does! When that happens we feel the bodily shift. Even then we may not yet have the words. *The muscles and the cells know the language*. They produce and respond to what we say and think. And they produce and respond to perception.

To have something implicit to think from is very reassuring. We don't have to make something up in some arbitrary way. And it is exciting when we feel traction in response to our words. Suddenly we feel traction where something felt stopped before. Now we can think further into it.

Might we end up saying something quite wrong? Yes, and even if not all wrong, anything we say will be partly wrong, and also poorly said. But by attending to the implicit version directly, we don't mean only what we say. We mean *this* actual implicit.

So it is clear: How cognition requires the muscles and circulation is the same fact as how the muscles and circulation can function in accord with cognitive rules, as Gallagher (2005))

said.

With these concepts many old puzzles resolve, for example psychosomatic medicine, intuitive understanding, the complex agriculture of indigenous people, improvisation as in musical ensembles[6],and many others. It requires the concept of an implicit intricacy which implies and enacts one occurring.

6 See Gendlin 1993. What comes ***directly*** from the bodily implicit is most truly one's own and may already have taken the others into account.

7. MOVABLE PATTERNS

Humans live in an environment that includes our human way of making things by moving *patterns* from one thing to another. Of course there are very complex patterns throughout nature. Plants also seem to have patterns. They turn to the sun and their roots grow toward the water. And animals also have patterns. How is the human way with patterns different?

For humans the patterns have come loose. We can move *just* visual or *just* sound patterns, or rather, they seem to be just patterns when we move them. Animals imply their objects in all the sense modalities even if they only hear or only see just then (as discussed in the section on "Separate Senses" in my *A Process Model* [1997] Section *VIIA,* p. 138).

We make artificial things by creating purely visual patterns and moving them. We put our furniture patterns onto the wood. We put the round shape on clay. Wood and clay don't have those patterns from themselves. *"Making" is moving a pattern* and imposing it on things that don't have that pattern from themselves.

To move a pattern onto something, we ignore that thing's own patterns and everything that lies between us and that thing. When we move a pattern, the space between here and there seems empty. That empty space is made by moving patterns. Then that space can seem to surround and precede everything else.

Humans do a lot of living just with patterns. We handle our situations mostly with the sound patterns of speaking. We are deeply affected by the sound patterns of music.

Our gestures are patterns. For example, when we wave to the people coming up the walk, we are not acting with an object up there in the air. The others recognize the gesture and respond back. Gestures are more complex than behavior although they appear to be simple patterns.

The human body responds to just patterns. If you stick your tongue out at a newborn infant, the infant's tongue will come out as well. Neurologists say the infant "*imitates*" you, but that notion misses something. The neurological structures involved are called "mirror neurons." Seeing someone do something rouses our own neurons that would be involved if we did it. But the notion of "mirroring" is insufficient. I say the infant is *responding* to you.

Moving just patterns is a special kind of behavior, more exactly, not behavior at all. A simple sound or motion carries the body forward and changes the situation. This is a special development that begins with a few animals. A certain simple move or sound can elicit a whole-bodied change, for example getting ready for fighting or for sexual intercourse. In some species of social monkeys each male turns his back when a superior monkey comes by. If he fails to turn, or if he bares his teeth, both monkeys' bodies change drastically and get ready to fight. What appears like a simple motion changes the body and shifts the whole context.

We humans develop this much further. We generate long sequences of such patterned moves and sounds. These are complex bodily changes and shifts in the situation. We generate version upon version of our interhuman action context. This is speaking and thinking, as well as

music and art.

Our use of just patterns is part of an implicitly intricate body-environment process, but the patterns seem simple. and as if we move them in empty space.

For example, behavior is called “motility.” The link between perception and action is called “motor coupling.” But actions are not just motions. Motions only change locations from here to there. The simple motion and its simple space are actually a complex product. One cannot account for action in terms of motion.

Patterns and their motions don't happen alone. They are developed in and with the earlier processes. They don't consist just of the repeatable patterns. Yes, patterns are ***inherently repeatable***. A “same” pattern can happen in many locations. Patterns are the origin of “universals,” generalities, abstractions. A patterned thing can be the same each time, like minted pennies. Then the pennies can be differentiated only by a location. This penny here is the one we observed over there before. Only spatial location differentiates “particulars” that have no features, only the same pure pattern. So we see that empty location space is a sophisticated creation. It is not the antecedent reality.

In our science we study organisms by plotting them on our patterns. We study what *they* really are, but we do it by mapping *them on our* conceptual grids and with findings on our instruments. This produces enormously valuable information, but on our patterns. What the patterns picture enables us to intervene, improve, and cure. But the patterns give us only a graph, a map, a picture that is presented before us. What is actually going on is implicitly much more and different in kind. Of course we need the patterns and this kind of science. We can employ both the patterns and the implicit in their precise reciprocal effects.

8. BEING IN THE UNIVERSE: CONCEPTS APPLICABLE TO THE UNIVERSE

Let us begin with our own ongoing. We are environmental interaction in the universe. Rather than assuming that human experience is not real, not part of the universe, that we are aliens where we live, ***we*** can begin from our living process. Then this "we" can immediately include the other animals, the plants, the micro organisms, and everything else that exists. They are all generative happenings.

We have been developing many precise concepts that let us think further. We keep them linked to the familiar implicit version to which we can attend directly. Thereby we always mean ***this*** which is implicit, not only what we say.

With the new concepts we need not try to understand ourselves and everything else only as spatial structures. We need not try to think that we "really" are only what space concepts can say. How we are is not possible within those concepts.

If we begin from how we are, we can see that what Casey (1993, 1997) calls "getting back into ***place***" is prior, much more original than location space, and also where we live after everything, and where we want to be able to perceive, act, and think from.

Since we exist, we can be certain that how we are is not impossible. But this question goes further. The concepts that apply to the universe cannot be limited to structures in space. Since some of the universe is us, the concepts of it must be such as can account for people, animals, and all other organisms. We are not just ***located in*** the universe; we are ***part of*** it. We may be very special but it is capable of being us.

We do not need to conceptualize the universe as having the nature of a single logical analysis. Rather, we can liken it to the sequence of analyses that develop in reciprocity with the implicit. The concept of that kind of sequence gives us a wider understanding of the universe. Therefore its basic nature is not limited to spatial structures and units.

The universe can be thought of as existing implicitly and explicating itself by occurring. We can take it as an implicit intricacy, a multiplicity of precisely organized factors and strands that are not separate, but always imply one next happening.

It used to be assumed that "the body" is the thing that will be left when I die. But that is not the body. That will be a dead body. This "body" is alive. I argue that we "know" what a living body is because we act and speak and think from one of those.

,,.

References

Casey, E.S. (1993). *Getting back into place*, Indiana University Press.
Casey, E.S. (1997). *The fate of place*, University of California Press.
Fodor, J. (1974). Special sciences and the disunity of science as a working hypothesis. *Synthese*, 28, pp. 77-115.
Gallagher, S. (2005) *How the body shapes the mind.* Oxford: Oxford University Press.
Gendlin, E.T. (1993). *Improvisation provides.* Paper presented at a panel on "Improvisation," organized by Robert Crease at the Society for Phenomenology and Existential Philosophy in New Orleans, October 24, 1993. From http://www.focusing.org/gendlin/docs/gol_2223.html
Gendlin, E. T. (1997) *A process model* (New York: The Focusing Institute). A slightly corrected version is available at http://www.focusing.org/process.html.
Gendlin, E.T. (2012a). Implicit precision. In Radman, Z. (Ed.) *Knowing without thinking: The theory of the background in philosophy of mind*, Basingstoke: Palgrave Macmillan.
Gendlin, E.T. (2012b) The time of the explicating process, in S. C. Koch, T. Fuchs, & C. Müller (Eds.), *Body memory, metaphor and movement.* Amsterdam: John Benjamins.
Gibson, J. J. (1966) *The senses considered as perceptual systems* (Boston: Houghton Mifflin).
Stuart, S.A.J. (2010) Enkinaesthesia, biosemiotics and the ethiosphere. In Cowley, S., Major, J.C., Steffensen, S. and Dini, A. (eds.) *Signifying bodies: Biosemiosis, interaction and health.* Portuguese Catholic University, Braga, Portugal.