

CHAPTER V: EVOLUTION, NOVELTY, AND STABILITY

CHAPTER V-A: INTERVENING EVENTS

I hope my reader is now hungry for "had" space and objects, for how our primitive terms can generate a way "the process" can register what goes on around it even when this does not carry the whole process forward.

This chapter concerns two questions. Before I ask those, let me first ask: With our new model, can we develop concepts for the theory of evolution? Currently the theory says that new forms just happen by "random" change). Natural selection only explains why adaptive forms are saved, but not how new forms come about in the first place. There are many indications that the random theory isn't right. The random creation of endless numbers of forms among which some are saved -- that is a very old speculation. (Aristotle quotes Empedocles holding that view.) If we look closely we can see that the old model is forced into this old speculation because of the basic way order is understood in that model. Order is only an arrangement of parts. Throw the parts up and how they come down is random. If they happen to have an order, it is not inherent in these parts. Order is only external relations among them. The parts are no different by being thrown up, no different for being in one order or another. In our new model there is no fixed set of parts. Therefore order or form is understood quite differently than as an external arrangement of unchanged parts.

If we conceive of process as we have done (in I-IV) we can think about how new forms evolve. In doing so, more explicit new concepts will evolve from the ones we have. Especially, we will see how environment and living process change together. When the environment changes, the body does not simply lose its organization so that it must select another from among randomly given new ones. **An organized system can give a new organized result in response to an impact on it.** Let me show more exactly how this can be thought about with our concepts.

The first of our two questions is: How do new and more elaborate events form? The second question is: How does a stable environmental context develop?

The first question can also be phrased in another way. How does the organism develop new sensitivities to the en? It is the same

question since new events are also new sensitivities to the en. Occurring is always b-en; therefore new ways of b-en are new ways of engaging the en, new ways in which the organism effects and is affected by changes in the en.

The second question arises because so far we have no stable object, only the process being carried forward and changing. In a stoppage the body implies the object (the missing en-aspect; see III) but as soon as the process is resumed by the object, there is no longer an object for it. As long as other processes go on somewhat differently because one is stopped, we call the differences the "schema," a bodily version of the missing en-aspect. But when it occurs, the process moves on and has no longer an object. The organism never has the object when the object is there! Obviously, somewhere along the line we must develop the groundwork for something stable -- for a way an organism can have an object even when it is present (not only when it is missing). But nothing, so far in our concepts, is of anything lasting, except stoppage, i.e., absence.

(a) Let us first consider how major new events may develop in the other processes:

We spoke (in IV) of a stoppage in one process interaffecting other processes. We spoke of this as if the differences are likely to be slight. But now I want to add that these differences could be major new events.

As one process is stopped, others are affected, and these in turn affect still others. What might seem to an observer an unnoticeable difference in one process could result in major new events in another process. For example, a tensor muscle made tense as one difference could result in still another process in kicks, or foot tapping. A very tense, frightened man trying to write something may find his hand jerking off the page.

We have added only that the differences in the other processes could be major new events.

(b) New events might develop in what we called "the stopped process" itself:

A process might just stop when it cannot continue, but it might also develop new events. This might occur in two ways:

(b-1) At the point where the process cannot continue, the last bit which can happen repeats. This is frequently found. We can also think of this repeating bit as the first bit of the process which cannot go on. Only this bit can, and then it repeats over and over. How can

we think about why such a repetition occurs?

We can conceptualize it this way: There is always an implying, not only an occurring. Each occurring occurs **into** the last implying and changes it. This **changed implying** is the last bit's implying. It implies the rest of the process. However, process is a continuity (we put the O's so close as to make a stripe; see diagram at the end of IV). There are no "bits" in the process. The stoppage forms such a "last bit," or "first bit." Now, if the process had continued, it would no longer be implied. Since occurring did not change the implying, the rest of the process is still implied. But only this "bit" could happen, and did. Hence the process is still implied, so that whatever part of it can happen, will happen, and that is this "bit." So it happens over again -- but a little differently, since the occurring did change the implying somewhat.

If the process originally came divided up into bits, this could not explain anything. The bit that happened would change the implying exactly so as to imply the next bit which cannot happen. But since the interruption forms such a bit, the change in the implying is a new one. The bit as it "repeats" is not literally the same. The process keeps being implied, and yet a new occurring sequence occurs, consisting of such "first bits," each a little different.

This "leap concept" of a new kind of sequence is a new kind of carrying forward (IV-A for leap concepts). As new kinds of carrying forward, and other new concepts, arise for us, we will regularly view them in terms of the concepts we have up to then, yet we will also recognize them as not reducible to the old ones. Explication involves more parts and distinctions which cannot be reduced backwards, neither need there be total gaps (as, for instance, with Piaget). There is a continuity between implicit and explicit.

"Intention movements," as they are called in ethology, are often observed -- for example, when two male monkeys that would normally fight are separated by a glass wall, the fighting sequence cannot occur. Instead, there is a long series of fight-starts. (Later we will discuss a further development in which they become what are called "threat gestures.")

Nature shows many instances of similar bits reiterated over and over, never quite the same. There are pulses of the heart, eye blinks, nerve impulses, and also structurally: Our concept of "sub-processes" of the organism (IVAc) lets us think how this is reflected in body structure, such as pores of the skin, hairs, and leaves on a tree. I will make such intervening occurring a verb, and call it "**leafing**."

We have **derived**¹⁵ rhythm, the many body processes which are leafings. It will be seen later how many of the organism's further developments are against the backdrop of rhythm, of leafing.

It is important to see that the new sequence is not exactly the first bit over and over. The first bit changes in character. For example, if you know you will stop, your first move in beginning to run is not really the same first bit as when you lean into a running that will go through. If you suddenly stop after the first bit of real running, you will fall forward. Similarly, a threatening gesture of raising a balled fist and waving it back and forth in the air differs from a swing into hitting. The implying of further change is different. The repeated first bits constitute a different sequence, **a new type of sequence.**

The insect hits the window pane again and again, beginning to fly out to the light only to hit the glass painfully. But after a while it makes little tries, bzzz, bzzz, bzzz, bzzz, but these are no longer those awful first few hits when the bug smashed into the window pane as its body implied flying out to the sun. Now they are little rhythmic starts, almost continuously, along the window surface, as if exploring, maximizing the chance of finding an opening if there is one.

We see that the first-bit sequence is different in kind. We also notice that it provides more opportunity for something new, than the original first bit did.

Consider a macabre example. During the Cold War the U.S. Strategic Air Command kept bombing-ready planes in the air at all times, "just as if" they were on the first leg of a bombing mission. A new sequence called "being in the air" developed -- it wasn't really the same as the first part of a bombing mission. The fueling problems, the long times, the round-the-clock shifts, all this was not part of a mission. Many parts that would lead to an actual mission were not done; other aspects of a mission were done.

We shuddered to think what might happen with so much bombing-ready time in the air. The chance for some unexpected occurrence during this phase was much greater than in the first few minutes of a real mission.

By leafing, the organism stays in the field of the stoppage. It remains at the spot, and under the conditions, of the stoppage. It would have spent only a moment there, if the process had not stopped. Now new events might form with the environment, which could not have formed before the stoppage.

(b-2) A second kind of new events may occur in the so-called "stopped" process:

As an example, say a walking animal falls into the water. Walking in water immediately assumes an unusual form since the movements do not encounter ground-resistance. So there is also no foot pressure. The movements will **therefore** be much wider. We call it "thrashing." The example shows that when the usual events cannot happen, what can happen may seem like quite a lot more.

Thrashing is a new sequence. It is certainly not unorganized. It has the organization of walking but in water. The movements are **immediately** wider because there is less resistance from the water. In addition, these movements also splash water toward the eyes so that there is a shift in posture to avoid the splash. There is also the shock, the faster circulation and all that goes with it, plus a host of other new but organized bodily effects. All this is immediately part of the next events that form upon falling into the water.

We could phrase it this way: when the implied further walking "bites into" the changed en, neither walking nor chaos results. Rather, a new organization results. Or, to use our more careful terms, when the en is different, what **occurs into the (unchanged) implying** is different. It is still an occurring into the implying.

A process is more than just the explicit arrangement of explicit parts, that an observer sees. When the usually observed process cannot happen, a different but orderly process can newly form.

Let us be clear that this new formation is not a mystery. In our simple example we can see how implied walking plus water makes thrashing. The implied walking never occurs. If we are too literal we will ask where the walking is, since it doesn't occur in the water. It is in the thrashing, but not literally, rather as an implying. An implying is not a specific explicit form, we said. Now, in this simple example, we can see that clearly. **The implied walking participates in the formation of thrashing, yet the walking does not occur.**

When what is implied cannot occur, it can function in the formation of a new organization. What happens may be much more and involve larger movements than the usual process would.

If either the body or the environment changes, the process will go on differently.

Another example: If a chemical that damages the cell wall is introduced into the solution in which certain living cells exist, the cells produce a new chemical which exactly repairs the cell wall damage.

The cell does not need to adapt itself to the new chemical over millions of years. The very first time it ever forms in this chemical, it forms in a differently patterned way.

It is not that we "explain" this finding; rather we are devising concepts that are consistent with the finding. When there is a change in the body or in the environment, the usual process of a living thing **immediately** has a new organization.

With these concepts we can think how it is that when the environment changes (in climate, other species, etc.), the living things change along with them. How the body functions, how it makes and remakes its structure (en#3) changes along with en#2. Although changing, the animals remain "adapted" as it is called. And, as we see here, **they become more elaborate**, as in evolution.

What determines the form of such an intervening event? It was not in the repertoire of the animal. Merleau-Ponty cites such a case: If one cuts off the lower half of the legs of a beetle, it will still walk . . . but not as it ever has before. Its movements are odd, and much more complex. Different gravitational pulls affect it. Now its whole body sways and other parts move to compensate for this. Yet this odd walking has never been in its repertoire.

The interaction between body and environment is such that if either of them changes, their interaction forms differently. The beetle's changed body engaged the en differently. **A change in the body makes for a change in the en#2.**

The beetle doesn't take time gradually to develop the new walk from the old one. The new walk occurs, as our law of occurrence states, as it can. The new series of events forms immediately.

I call this kind of new events "**intervening events**." When the usual process is stopped, such events may intervene.

But can we still call it "stoppage," when not only other processes, but the supposedly "stopped" one seems also to go **on**? We might call them "stop/ons," since they are part of the process that cannot go on as usual. But, is there still a difference in kind between the old process that cannot go on, and these stop/on events? Let me postpone this question for VB.

Let me first try to show that these novel developments are likely to continue and to multiply. If there is even one bit of change, many new events will occur and proliferate.

Two avenues of novelty: **There are two avenues of further change:**

By interaffecting the other processes a stoppage or stop/on in one process will make the others different, and these may interaffect still others. A slight alteration in one may lead to dramatic developments in others. But interaffecting is not the only avenue by which a change can engender more changes.

By altering the environment shared by other processes, a change can make for further changes. Since events consist of both body and environment, the new stop/ons engage an altered en#2. This may change the en#2 of other processes since they may share that concrete en, (or if the reality circumstances of the new en#2 are such as to bring along other en aspects that affect the en#2 of other processes).

For example, by splashing water in the eyes, thrashing may affect the en of the eyes. A new sort of walk might stir up dust and thereby affect the en of breathing. A rhythmic swaying in one spot previously gone through quickly might expose the animal to many new environmental influences.

The other processes may be affected by a changed en (eyes may close, dust may be inhaled, etc.). Changes in these processes may affect still others via the en. Dust coughed out or moving with eyes shut may involve further new en aspects that can affect further other processes.

Meanwhile, as we said, through interaffecting in the body also a change in one process may affect others.

A change along either avenue can lead to further changes both by interaffecting and by how a changed en is differently engaged.

If change came about only by interaffecting, the difference would be made and novelty would end. But since it also changes the en#2 of other processes, and these changes interaffect other processes which bring about more changes in en#2, the series of novelties can develop indefinitely.

Of course, the subprocesses and their ens similarly affect each other and elaborate the body structure.

Let me more exactly explain why both avenues are needed for continuing novelty: the question is the same as why ev x ev goes to a stable result.

We saw in (IV-Aristotle) that everything x everything is just the occurring: The many differences do not **occur** and then make further differences that again occur and so on. One occurring forms.

Therefore, if we think of the bug, its new walk occurs **immediately** upon the change. All the differences the change makes go into forming the very next occurring.

Similarly, if there were only the shared en changes, novelty would come to a stop. Every difference made to the en of all other processes would be made in one sequence, and no further effects between the processes would happen on that account.

These are two **kinds** of change: One is part of **the formation** of one event; the other happens after something occurs as b-en.

But why is this so? Why can we not say that interaffecting also changes the en#2 of other processes which are immediately different and also interaffect still others, and so on? Then all novelty would form in the very next occurring.

The question is the same as why everything does not happen at once.

The answer can now be clear: When we say that there is immediately a new organization, this "immediately" refers to the eveving in the formation of the next event. **Another set of changes arises because that event has occurred.** The change via the shared en happens only as the event actually occurs.

Both interaffecting and shared en happen in the formation of each event. But the changes due to the shared en are those that happen only in an occurring, as implying "bites into" or "engages" the en in one occurring.

For example, let us say you are typing. By interaffecting you are set to type some Freudian slip and your fingers move to letters that express something more than what you are thinking about. That is an interaffecting change. But suppose some previous change has moved the keyboard over with a slight jerk. Then even the "wrong" letters will not be typed as implied, because your fingers will land on different letters. That is the second kind of change. You don't first type the correct letters, and then the wrong ones, and only then the displaced ones. Only the last occur. Then the occurring may have further effects on either or both avenues.

Let me emphasize that the displacement of the letters on the shifted keyboard are **not eveved**. The displacement is not due to an interaffecting. **The shifted keyboard happens into the eveving.** Because of the eveving only certain letters will be typed but because of the en-shift, the typed letters are different than the implied ones.

Thus the existence of two change avenues enables continuing change, as each makes for more change on the other avenue in any occurrence.

"Everything" does participate in forming one event but its occurring involves en#2, and that changes the implying. Now it is a different "everything" and that again engages the en in another occurring.

A change from interaffecting alone does happen in the formation of the one event, and so does a change from the shared en alone. Say both happen in one event. The implying may include changes from interaffecting and it may also have bitten into an en that other processes have changed. So the occurring may be doubly different. **The changed occurring** may newly interaffect other processes (which might change the en), and it may also make for **new** changes in an en that other processes share (which will make for new interaffecting changes).

So a change in the shared en can make new interaffectings, and new interaffectings can make new changes in shared en. These are two different avenues of change. Both produce something new **immediately**. They may (or may not) generate an unending chain of novelty.

Let us recall that what participates in evening does not occur. Many past experiences function in shaping one present; these past experiences don't occur. Similarly, the difference a process makes in the others and how this in turn affects it, do not occur. Only the evening occurs. As I put it, evening doesn't take any more time than the time of occurring. The many lines the artist might draw, and the various effects these lines would have, enter into the artist's sense that guides the right line. But all those other lines and effects don't occur. They are only part of the formation of a single occurring (see IV-Ad-3)). This is basic to what an implicit order is. Nor does it require time to produce the novel organization due to a changed en#2. If the implying bites into a changed en, something different occurs. **The process will not first occur as implied, and then differently.**

We have now answered our first question. We have derived an **increasing capacity to be affected by the environment** or, as we put also it, the body's engaging the environment in ever new ways (en#0 becoming en#2).

There is an important implication here for the theory of evolution. To provide for novelty and development, the traditional evolutionary theory uses mutations. These are supposed to be random, with

natural selection providing the selection according to which only what is adaptive will last and be reproduced. But this is an ancient question, not at all merely the modern theory of evolution. Students of philosophy recognize the mutation theory as an application of the ancient question of whether order can somehow come by chance from random chaos. (See Aristotle on Empedocles, *De Anima* and *Phys.*)

The theory argues that mutations account for evolution, not because adaptive mutations have often been seen (students of actual mutations, as in fruit flies, report that they are always stunted forms and not novelties, and paleontologists have dug up nothing like the billions of odd forms), but because the theory needs a source of novelty. The old model cannot **explain a formation** of structure. This problem instances the difficulties of the old model. New organizations must drop in from heaven, so to speak. They must be externally "imposed" "somehow" or "gradually," because the model of fixed parts makes novelty a mystery.

Once there are new forms, natural selection can explain why some are kept and continued. There are quite good empirical corroborations of this. For example, the bird species that can no longer fly because the wing they spread for sexual attraction has gotten so large. This example also shows that selection is not always adaptive.

Might the change we just derived be adaptive? We have not shown that it would be useful to the animal, or that it would help with resuming or otherwise surviving a stoppage. That is not certain but let me show that it is likely:

For example, if walking is stopped, does thrashing or eye-closing help get out of the water, or adapt to it? If a given process is stopped, does it help to do the first bit before the stoppage over and over?

It would be far too much to say that it would usually help. At most we could say that many new developments occur during a stoppage of one process, and that these developments would engage new aspects of **the environment during the stoppage**. The animal would become more sensitive to the circumstances of the stoppage. The intervening events engage the environment as it is during stoppage, and so they are likely to involve factors that are at least pertinent¹⁶ to the stoppage. So it is not certain, but it is likely that a way of carrying forward would develop.

While an elaboration leading to adaptation is likely, it might not occur despite a great many new developments. Then the animal

might die; the species might become extinct.

If an intervening event turns out to resume the stopped process, or if all the changes and new en-engagements enable a resumption to occur, the intervening events that lead to resumption would become part of that functional cycle. It would be an elaboration that has become a part of the cycle. The erstwhile intervening event would now carry the process forward in the same sense of "carrying forward" as any other stretch of the process.

What about the other intervening events -- the ones that do not lead to a resumption of the process? They would still occur where they have developed, but they would not be part of the functional cycle in the same sense. But we will soon see that they do acquire an important role.

In IV we saw that what eventually resumes a stopped process might be very different from the originally missing object. The intervening events are all changes in how the body occurs. The changes may enable the body to be carried forward by different en-aspects than erstwhile. I called the difference a stoppage makes the "schema." Now we have seen that via occurring such changes can continue and proliferate. The intervening events can be thought of as the specifics of the schema, further developments of the schema, often quite dramatic new events and elaborations.

This development will have made a great difference even if the resuming object is the same as before, because now it occurs along with a lot of additional environmental interactions. So the resuming event is more complex and more differentiated than before the stoppage. An observer might pick out only the object, which might look the same, but to the process the object occurs together with other en-aspects. After the development of intervening events, the object occurs in the context of (in midst of) these more elaborate engagements with the environment.