

The summer mailing, no. 32: (A is good and E is bad)

A: SusPro Sum 44, Spr, Sum 45, FanTods.

B: En Garde, Fantasticonglomeration, The Voice, Cry in the Night, Walt's Wramblings, Decimal Classification, Blitherings, Horizons, Beyond, MOO #18, 19.

C: A Tale of the 'Evans, The Mag Without a Name, The Time Binder, Light, FA, Science fiction Savant, Twilight Echoes.

Ungraded: a, Plaintive Numbers.

The fall mailing, no. 33:

A: Fanzine Yearbook, Inspiration, Horizons, Sustaining Program, FanTods

B: Afterthought, Light, Browsing, The Time Binder, The Voice, Reader and Collector, Fantasy Jackpot, Fantast's Folly, Milty's Mag, Phantagraph Apr, Fan-Dango, Allegory, Milty's Mag, Nonesuch, Fantasy Amateur.

C: A Tale of the 'Evans, The Mag Without a Name, Walt's Wramblings.

Ungraded: Phantagraph May, Phantasphere, In Memoriam Sardonyx.

To Les Croutch: Here's what the 1942 Merriam-Webster says:

venerian, adj. & n. = venerean. Obs.

venerean, adj. [F. vénérien.] Obs. a. Born under the influence of the star Venus; amorous. b. Devoted to the offices of Venus or love; venereal. c. Aphrodisiac; also, attractive; handsome.

venerean, n. A libidinous person. Obs.

Venusian, adj. Relating to the planet Venus; of or pertaining to the planet Venus.

Since most fanzines and prozines are referring to the planet Venus rather than to the goddess Venus we submit that Venusian is a perfectly correct form (and might add several other comments but won't).

To Jack Speer:

1. By "formula" you apparently mean something like "C₂₀H₁₄O₄", which would mean nothing much to a chemist, since there might be 17 or 51 compounds with that formula. Such isomers, as they are called, are differentiated by their structural formulas which show how the twenty carbon atoms, fourteen hydrogens and four oxygens are joined to each other in the molecule. The "jawbreaking names" are the results of actually attempting to "just speak the [structural] formula"; ideally one should be able to draw the structural formulas from the jawbreaking names but that, lamentably, is often not possible.

2. If we take 37 numbers at random (corresponding, we hope, to the numbers of votes for Amazing's 37 stories) the chances are one in 51 octillion that 34 of them will be divisible by 9. Perhaps the converse of this -- that if we find a set of 37 numbers of which 34 are divisible by 9, the chances of this set having been picked at random are one in 51 octillion -- is not necessarily true. We have an intuitive feeling

that it is true but have often intuited wrong in the past, so the answer had best be left to a mathema- or statistician. You, to the contrary, believe that the chances of such a set having been picked at random should be equal to merely the chances that 34 of them have some trait in common. We might reductio this ad an absurdum by including the trait of being divisible by one, in which case there would be a 100% chance of those 37 having been picked at random. And how are you going to decide what traits to include and what not when you figure the chances of them having some trait in common?

3. How about publishing an "A Key to J. Speer, Esq.'s Allegory", so that we can figger out the other half of the allusions?

THE TIME TRAVEL TAIL

(fragment 2)

(Following the suggestion of Art Widner this has been extracted from the dusty pile which has lain untouched since 1940. Since our indexing and some of our reading also stop there at that date, we have made no attempt to bring the coverage up to the present. There probably would not be many new ideas added to this section in so doing anyway.) (Some day we hope to have the whole thing in shape for presentation!) (Here we consider only a one-track time -- branches are taken up in a later section.)

2.5 Paradox Lost and Paradox Regained

2.5.2 The Cycle Paradox

First presented by Cloukey in the Paradox series, a cycle paradox may be outlined as follows: Dr Hawkinson in our present finds a manuscript in his mailbox with plans for a machine to project bodies into the future; it is in the handwriting of his friend Cannes, but the latter denies having written it. The machine is built and Cannes takes a trip to 2930, where he finds that in 2806 Dwar Smit invented a time projector -- the same one that Hawkinson's plans depicted. Although Smit's type projector could only transport bodies to the future, it happens that Dwar Bonn in 2930, just three days before Cannes' arrival, has finally perfected a method for travel into the past. Cannes thereupon makes copies of the Smit plans (although in 1930 he had denied having written them) and travels back via the Bonn invention, placing the plans in the Hawkinson mailbox. "The manuscript in my hand was the identical one that was to provide means for sending me into the future. But I was already in the future!...Because this manuscript had been found by the doctor, I reasoned, I had been able to go to 2930. But also, only because I had gone to 2930 had the manuscript come into being. Which was the cause and which was the effect? That is a paradox I cannot explain. A thousand years from now it will be understandable and common to the people of the world."

In Brige's Via the Time Accelerator the hero sees himself returning from the future just as he is starting on his trip to the future. "Had I not seen that return I would not have commenced that strange journey, and so could not have returned in order to induce me to decide that I would make the journey!" He arrives a million years in the future where he meets the last man, who has read historical accounts of the hero's trip. The last man steals the machine and goes back in time a half million years to end his days in peace and comfort among his ancestors.

The machine is placed in a museum where it rests the half million years in normal passage of time until recovered by the hero, who fixes it up and returns to his own time. He wonders about the possible occurrence of a cycle paradox: "What would have occurred, I wondered, if the Last Man had returned to 502 101 AD with the machine that already stood there in that case? But he couldn't have done that, for then he would have been taking the time machine out of its location long before it arrived at that location, and I, after arriving in 1 001 930, would have returned to 1930 with the original, new machine; so I could not have left it in 1 001 930 that it might go back to 502 101 AD where it could be put into a museum case for the Last Man to find."

JHNicholson uses the cycle paradox to invent a time machine -- he "takes a time machine and travels into the future from where he sends it (under automatic control) to the past so that he may find it and travel into the future and send it back to himself again. Hence the time machine was never invented, but! -- from whence did the time machine come?" He also speaks of traveling to the future, copying plans of an invention, returning, disclosing it to the world. Who invented it? Then he presents something new in cycles: "What if a man were to travel back a few years and marry his mother, thereby resulting in his being his own 'father'?" (He later discounts this as bigamy!!) Again, this prolific Nicholson uses the cycle paradox to make himself a millionaire: He proposes to borrow a hundred dollars, time travel back to when he borrowed the money (taking the \$100 along on the trip) and give it to himself, making himself the possessor of \$200, so really he had \$200 when he started on his trip, enabling him to give himself the \$200 thus making \$400 with which to start the trip, and so on, thus providing himself with an infinite amount of money. Now although it may be only small comfort to those of us who are trying to resolve or refute paradoxes, it may even so be pointed out that this infinite amount of money does him no good because he cannot spend it -- he must take it all back with him on his cycle through time. Nicholson concludes: "Also you could go back and teach yourself certain things which you had learned when you were teaching yourself /i.e., had learned from your 'older self'/. Now then, where in blazes did you learn anything in the first place if you told yourself and no one told you?"

Eshbach treated these troubles quite lightly in The Time Conqueror. He speaks for the Brain which can perceive all time: "Since I see all that is occurring in every age, I have but to choose what I wish from Time's store of knowledge, and transmit it to others for execution. There is no paradox in this; I am in no wise changing the future -- for in the fourth dimension all is the present; and in certain portions of that present I exist." Fortunately (from the paradox point of view) The Man Who Lived Twice, who, according to Kober, went into the future to obtain the secret of atomic power, was killed before he could accomplish his objective.

The cycle paradox is used to very good effect in the conclusion to The Return of Tyme (Fedor and Hasse) written by the Office Boy, Mohammed Ulysses Socrates Pippis. The editor of Future Fiction has copies of the future issues of his magazine, given to him by a visitor from the future, and containing many stories by old favorite authors. Since he thus has these stories already written he makes deals with the various authors whereby they merely type out a copy of each of their stories from these future issues and send them in to the editor. The authors were satisfied to accept half their normal word rates for these stories since they did not have to think them up but only copy them. The question is, who did think them up? Douglas W F Mayer wished to use a simi-

lar method to save himself trouble in editing his own magazine, Tomorrow.

In a super-short story Paradox ++, Omnia gives us a slight variation on Bridge's cautious hero mentioned above, describing Mort Wheams' experience with his newly invented time machine: "[He] is a cautious fellow. Before taking off he looks to see if he has landed two hours before. He finds that he hasn't landed so he figures that he crashed... and was killed or something. Well, to avoid this, he doesn't take off -- and that's the reason he didn't land, because he didn't take off in the first place. It's all sort of mixed up, sort of."

Weisinger's Prenatal Plagiarism may at first glance appear to be an example of a cycle paradox, but it is not. The hero is accused of plagiarizing his best-selling novel word for word from an obscure nineteenth century writer, but actually it was the reverse -- the nineteenth century gentleman had visited the twentieth century, brought back a copy of the best-seller, copied it and sold it. (What a way to use a workable time machine!) This would be a cycle paradox only if each author had copied it from the other; as it was, the later author actually composed the story instead of copying it from the obscure nineteenth century book. Manning's Prophetic Voice from the future tells mankind that some unknown danger threatens him, that he has disappeared from the face of the earth during the next two hundred years from the present. Mankind, heeding the warning, hibernates underground for the next two hundred years, emerges to find no apparent changes on the surface, no evidence of any danger. Did the Voice observe the hibernation, tell them of it and thus cause the hibernation? Such is the suggestion of Milton Rothman. Weinbaum's The Circle of Zero again pictures a situation which might pass as a cycle paradox, but close inspection makes that seem doubtful. The story involves seeing what will happen tomorrow by remembering what the corresponding "tomorrow" brought forth in a previous cycle of the universe. "This other Jack Anders, this ghost of quadrillions of centuries past -- or future -- he too must be watching, or had watched, or yet would watch, me -- the Jack Anders of this cycle of eternity... Each of us watching the other; neither knowing the answer. The blind leading the blind!" But it seems that really they were not leading each other -- each was watching the course of the other's external world, which did not depend on their personal actions (except perhaps in a certain philosophical sense).

James W Dudley: "If in 1935 a time-machine is invented and the inventor travels to 1985 -- learns the plans of an invention new in that year and brings it back to 1935, and 'invents' it anew -- how can it be a new idea of 1985 when it was 'invented' in 1935?" If the invention was conceived by the 1985 gentleman independently and without knowledge of its existence in 1935, all well and good. Similar things happen every day: people often invent things new to them only to find on attempting to patent them that others have had the same idea long before. It is only when the 1985 gentleman merely copies the plans published in 1935 that we have a true cycle -- knowledge creating itself. Douglas W F Mayer gives an example of a true cycle in much the same words as Dudley, but with the very necessary additional point that (to continue the Dudley example) when he gets the plans in 1985 and asks who invented it, he is told that he gave the invention to the world in 1935; when he returns from 1985 to 1935, sure enough, he does so! Mayer concludes, "Who invented the Atomic Motor? Stevenson did not, because he built it from the plans he obtained from the future, and the people of the future did not, because their knowledge of it was obtained via history, from Stevenson's model. But the Atomic Motor cannot have 'jest growed',

so I repeat: 'Who Invented the Atomic Motor?' P. Schuyler Miller in Sands of Time declares: "As for going ahead and learning all the scientific wonders of the future, then coming back to change the destiny of humanity, sixty million years is a long time. /His type machine could only jump multiples of that period./ I doubt if there'll be anything human living then. And if there is -- if I do learn their secrets and come back -- it will be because their future civilization was built on the fact that I did so. Screwy as it sounds, that's how it is."

Binder's Time Entity presents a variation of the Nicholson cycle wherein a gentleman is projected back several centuries, to live normally in that earlier time for the rest of his life, during which time he begets the children who are the ancestors of himself. In Devolution Madle gives us a slightly different cycle in which the men of the future, finding it increasingly difficult to live on an aging earth, travel back through time. For some reason as they penetrate the past they devolve back through present-men, ape-like creatures and so on until finally in the remote past their vehicle stops, the door automatically opens and out drips some protoplasm, the same protoplasm which evolved, or will evolve, through ape-like creatures, through present-men to finally produce the last-men. Arnold's When Atlantis Was shows a destroyer and crew transported to the past, where they meet a crew of stranded Moon women and proceed to become the civilization of Atlantis, and incidentally their own ancestors. The author attempts to discount this latter: "'But I don't believe that, if we are destined to become the great grandfathers of Atlanteans, we'd necessarily be our own ancestors.' 'What else would you call us?' 'I don't know, but such a premise would explain why Witherspoon and the other four on the McGinty couldn't travel through time with us. They WERE descended from some of the Atlanteans who escaped from the final tragedy. And so they couldn't go back.'" But unless Arnold develops some other source of ancestors, unmentioned in the story, their only possible ancestors were the remnants of the Atlanteans, descended in turn from themselves and the moon-maidens.

All of the foregoing examples of cycle paradoxes can be divided into two classes, which we shall call material cycles and configurational cycles.

A. Material cycles. To build up an example we shall use the suggestion of Jim Nicholson mentioned previously -- he takes a hundred dollar bill around through time and gives it to his younger self. But first let us diagram the simpler case where there is no exchange of money (vile symbol!):

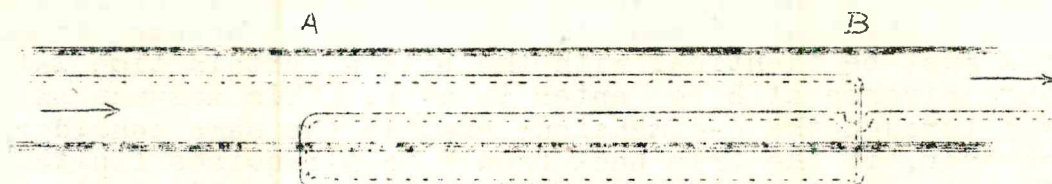


Fig. 1

The long channel bounded by the two heavy lines represents a section of our space-time universe, stretching infinitely from the beginning of time to the leftward to the end of time rightward. The solid line inside the channel represents our hero's normal course through time, and the dotted line his hundred dollar bill. He progresses normally from the left to time A, whereupon his older self materializes beside him from out of the o-dimension (represented by the region of the diagram outside the channel of our space-time) with the hundred dollar bill. Now there are two heroes which we call the younger self and the older self. Each has his hundred dollar bill, but the younger self cannot

spend his, or at least he must get it back again before time B, for he must then have it to take with him on his time trip. So the two aspects of the hero live normally in time until B, when the younger self enters the time machine and goes back to A via the o-dimension; he reenters our universe as the older self, meets the younger self, relives from A to B in normal fashion with him, watches him depart in the time machine at B, and continues normally down the channel into the future.

So far this picture presents no difficulty if we admit the possibility of a particle being in two places at the same time -- all the atoms of the older self at time A, for instance, are also in the universe somewhere else -- some in the body of the younger self already, others in the food the younger self will eat before time B, and so on. As pointed out in a previous section there seems to be no valid reason why a body cannot be in two places at the same time. But now we make ourself a paradox: suppose that the older and younger selves exchange hundred dollar bills before B, say at time C. Then we have a picture like this:

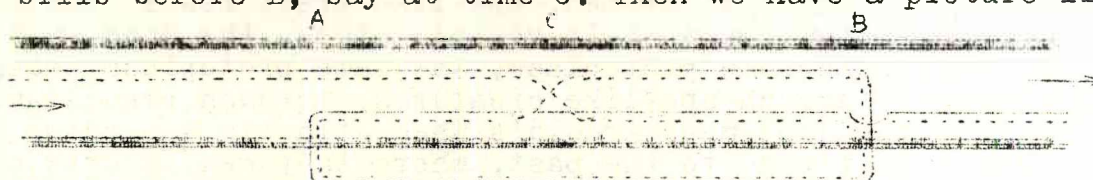


Fig. 2

Now obviously we don't need two bills to do this. The one the younger self gave to the older self has not traveled in time ("true" time travel, that is -- of course it continues through time in a normal manner) at all. If we leave it out of the picture and concentrate our attention on the other, we have this picture:

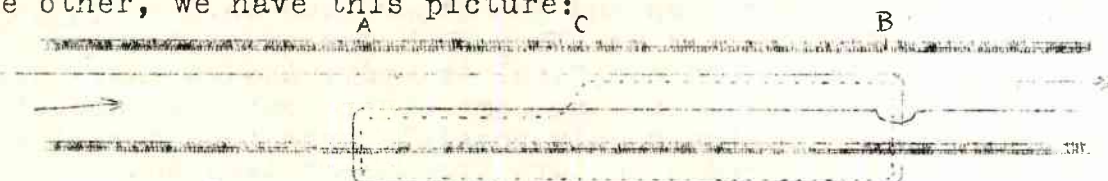


Fig. 3

Here the older self appears at time A with a hundred dollar bill, gives it to the younger self at C, and the younger self takes it with him when he leaves on his time trip at B, to take back and give to the younger self. That hundred dollar bill is an example of a material cycle paradox: we are not confronted with a thing being two places at the same time, but rather with a thing that springs full grown out of nothing. But where? Its atoms have no beginning back at the beginning of time as do all ordinary atoms. They have no beginning at all.

But can such a sequence of events really happen? Closer investigation seems to indicate that it cannot. The bill as it appears in our universe at A must be identical with the bill a certain time later, as it leaves our universe at B to enter it at A. (This assumes an instantaneous trip through the o-dimension; exactly the same considerations apply, however, if the trip back from B to A requires finite clock time.) That certainly means that the younger and older selves cannot handle it with their bare hands -- in so doing they would rub off at least a few of its atoms and deposit some dirt in their place, perhaps. Even if they use excessive care, a few of the cellulose molecules and ink molecules will be oxidized by the air. Keeping it in a vacuum or in an inert atmosphere will perhaps prevent that, but would not stop the ink solvents from evaporating -- we'll have to cool it down to absolute zero. Light and other radiation must be excluded, because any quantum or material particle reflected from the bill will produce a change in it since such reflections are the result of physical collisions with the particles of the bill and produce corresponding changes in the

bill. Perhaps even being in a gravitic field will change the atoms somewhat.

All of the foregoing can be easily expressed in one word: aging. If the hundred dollar bill exists normally in this universe from A to B it ages during that time. (This aging difficulty can be more strikingly visualized if the bill is considered as having been ignited, somehow, and burning -- i.e. aging very rapidly.) So the bill at B is older, different from what it was at A, and if that is the case it cannot be taken back via the o-dimension and be the one at A. If we are to have such a cycle we must arrange somehow that the bill at B is identical atom for atom, electron for electron, with the bill at A (or that such identity is attained during the passage through the o-dimension in the case of a non-instantaneous trip). This can be accomplished in two ways -- either by preventing any change whatever during the normal passage from A to B in our own space-time, or, if change is allowed, by returning each individual atom to its own former position and state. The first can only be insured by preventing any interaction with the outside world, which would mean that it would be unobservable: we can observe a body only by physical interaction with it, and such interaction changes it. And can we say that something impossible to observe has physical existence? Furthermore, in addition to completely isolating the bill from our universe we must take precautions that its own molecules do not react with each other, that radioactive impurities in it do not radioact -- in itself no mean task.

As for allowing the bill to change during its normal passage from A to B with the hope that it can be returned to its original state at the instant it reaches B, the possibility seems remote. In view of the enormous number of atoms present in the bill, the chance of them all simultaneously returning to the A configuration at the instant B is exceedingly small, unless we invoke the aid of Maxwell's demon. Certainly there is nothing in present day science to lead us to expect such a feat.

From the standpoint of a single atom, however, the picture is somewhat different. If we imagine a helium atom, for instance, as replacing the hundred dollar bill in Fig. 3, it would be possible for it to undergo various changes after appearing in our continuum at A and still at instant B return to a state identical with that at A. Here perhaps the uncertainty principle would come into play: if we observe this atom we must disturb it, since we can only observe it by such physical processes as reflecting light quanta or electrons from it, and after such observation we could not be sure of getting the same He atom back again. If we happen to recover a different, though indistinguishable He atom after the observation we no longer have a closed cycle path but an open loop as in Fig. 1, extending from the beginning to the end of time, and no paradox. Only if we recover the same atom after observation do we have the paradox -- a He atom which has no beginning and no end, but which exists only between instants A and B. Since there would always be a finite probability of recovering the proper atom we would appear to have a finite possibility of the paradox. And there is a very great probability that we are talking nonsense when we speak of a "different, though indistinguishable" atom being recovered -- that is a point for the philosophers to work on.

In any event we can conclude with fair certainty that any such material cycles involving massive bodies would be unobservable by us, and we need bother ourselves about them no longer. We have enough trouble with things we can observe!

B. Configurational cycles. This subdivision deals not with the cycle of any physical object, as a hundred dollar bill, but rather with certain groupings or configurations of atoms -- those which can cause the formation of similar configurations in other groups of atoms. We may, for instance, define knowledge as certain configurations of molecules in a person's brain; imparting a certain bit of knowledge to another person involves the formation of a similar configuration in his brain. Likewise a human being is a configuration of atoms, slowly but continuously changing, of course, which can produce similar configurations. In each case the new configurations created by the original one can exist alongside the original -- there is no law of conservation of configurations, we believe.

a. Knowledge cycles. This situation has been presented many times, in one form or another, and may be diagrammed as follows:

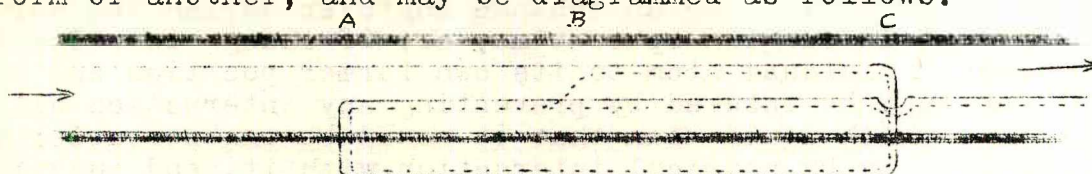


Fig. 4

The solid line represents the hero, the dotted line represents some piece of knowledge, say the secret of time travel. The hero lives normally until A, at which time his older self appears from the future via the o-dimension. At B the older self confides the knowledge to the younger self, but of course he still retains it also. At C the younger self goes back through time with the knowledge to give himself, while the older self continues normally with the knowledge. Here the knowledge has been created from nothing.

Can we countenance such an idea? It is admittedly rather bizarre and disquieting, but consider for a moment the following series of events:

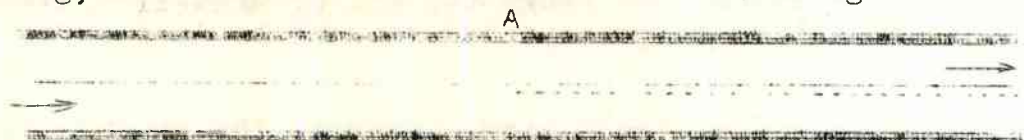


Fig. 5

Here, as usual, the solid line represents the hero. At A he has a hunch or an inspiration, or what have you, and figures out the secret of time travel, and the dotted line represents that knowledge. This sort of thing often happens -- knowledge being created out of "nothing". Perhaps it is only a step from this to the paradoxical cycle of created knowledge. Admittedly the hero in Fig. 5 has probably done a great deal of studying and thinking before the knowledge was created at A as opposed to the something-for-nothing situation in Fig. 4, but even so, it may be that the two are not too dissimilar.

b. The Nicholson Paradox. Thus we honor Jim Nicholson who first suggested that a man might travel back in time, meet his mother, and become his own father, even though Nicholson later repudiated such a possibility. The sequence of events:

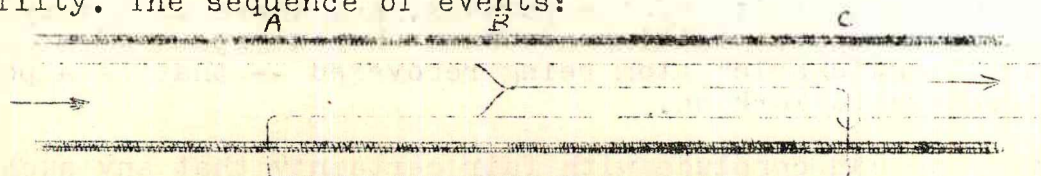


Fig. 6

Here the upper line represents the woman who is met and swept off her feet by a man who appears from the o-dimension at point A. They marry,

if you wish, and at time B produce a son who grows up and invents or otherwise acquires a time machine in which he travels back from time C to time A, where he meets the beautiful girl, begets a son at B who departs into the o-dimension at C, leaving the man and wife to live by themselves on into the future beyond C, perhaps to even stranger adventures. Or if we are not averse to the idea of brother-to-sister mating (widely practised in breeding laboratory animals to obtain pure strains) we can imagine the dramatic sequence of events shown here:



Fig. 7

Two people appear at A in their time machine, marry, generate a son at B and a daughter at C who both grow up and depart on their time trip at D, leaving the parents (who are the children) to grow old together. Again, we can picture a time traveling bacillus:

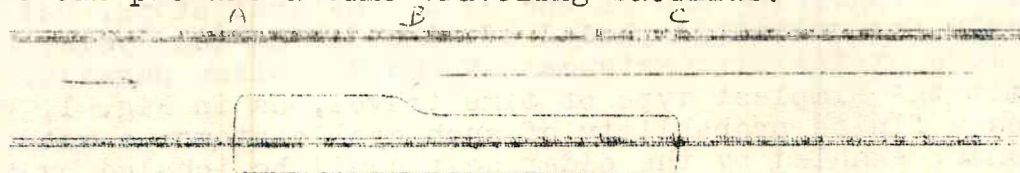


Fig. 8

He emerges from the o-dimension into our normal time stream at A. At B he divides, creating two bacilli which grow and live on until C, when one of them leaves in the time machine to travel back to A, the other continuing on normally, perchance to divide, and divide again. Similar diagrams may be drawn for the various other instances of the cycle paradox, as when the hero, instead of going back to become his own father, penetrates the past still further to become some more remote ancestor.

Consider an individual undergoing a Nicholson path as in Fig. 6. If we trace the component atoms making up that individual we find that (with a few possible exceptions which we discuss below) their paths are not closed cycles but simply open loops similar to Fig. 1, with beginnings at the beginning of time and ends at the end of time. Thus we have a case of uncomplicated time travel as opposed to the hundred dollar bill in Fig. 3, where the component atoms had no beginning and no end. At first glance it might seem that the same argument brought forth in connection with that bill might apply here: the atomic configuration of the "son" at C (Fig. 6) must be identical with that of the "father" at A, and the probability of such an occurrence should be vanishingly small. However there is a basic difference between the two cases -- the hundred dollar bill is a definite particular aggregate of atoms which must maintain its identity throughout the normal passage of time from A to B (Fig. 3), or at least wind up at B in a state identical with that at A. In the Nicholson case the identity of the aggregate is not maintained, and it would seem that the probability of the "son" acquiring his certain definite configuration at instant C should be no less than the probability that the mother, for instance, who time travels not at all, acquires her own definite configuration at C, or that you yourself will acquire your own definite configuration as of 17Jan63, 1200 GMT, whatever that may be. Or that the "younger self" of the simple time traveler of Fig. 1 acquires a configuration at time B identical with that of the "older self" at time A.

As mentioned above, a few of the atoms which make up the Nicholsonian individual may not follow simple open loop paths through time. The atoms which make up the "son" in Fig. 6 have mostly come from the normal

world in the food which he has eaten, but a few (relatively a few, that is -- actually an inconceivably large number) have come direct from the "father": those making up the sperm cell which fertilized the egg to form the "son". Of these latter atoms, most were obtained by the father from the normal world via food, and so would have normal beginnings at the beginning of time, and hence ordinary looped paths. But there is a finite probability that a few of these sperm atoms could be traced all the way around the cycle and found not to have entered the individual from an external food source but from the sperm cell itself. In other words, there is a finite probability that certain of the atoms involved in Fig. 6 follow cyclic paths with no beginnings and no ends. In the symmetrical case of a "mother"- "daughter" cycle the probable number of such atoms with cyclic paths would be much greater, and still greater in the case of the time traveling bacillus, Fig. 8. For the cases where the hero becomes a remote ancestor of himself the probability of such atomic cycles arising from this cause becomes much smaller.

The mind rebels at the concept of atoms following cyclic paths -- atoms which have no beginning and no end as do "natural" atoms, but are in existence only for a limited period of time during the cycle; it may rebel even more at the circumstances of the Nicholson paradox. And even if we admit the simplest type of time travel, as in Fig. 1, there is introduced a finite probability of such cyclic atoms: a water molecule, for instance, exhaled by the older self could be inhaled by the younger self, remaining condensed in the mucosa while he travels back through the 0-dimension to become the older self, until finally reevaporated and exhaled at the proper time to be inhaled by the younger self. If we could show the a priori logical impossibility of such cycles we would have a good case against the possibility of free time travel, since the latter necessarily implies the former. But is it a paradox? Is it any more difficult to imagine the existence of these cyclic atoms which had no beginning than to imagine the beginning of the "normal" atoms -- i.e. the creation of the universe? Or consider the race which develops the necessary knowledge and power to travel back to the dim past and sow the seeds of life which were to evolve through the ages up to the race we are speaking of and beyond. Is this any more unbelievable than the ultimate development of the human race (or even the development of the human eye) from non-living matter by accident, or the creation of life by a god?

Bibliography. Arnold: When Atlantis Was, Amazing Oct, Dec 37
 Binder: The Time Entity, Astounding, Oct 36
 Bridge: Via the Time Accelerator, Amazing, Jan 31
 Cloukey: Paradox, Amazing Quarterly, Sum 29; Paradox I, Amazing, Jul 30
Anachronism, Amazing, Dec 30
 Dudley: Wonder, Apr 36, p 1018
 Eshbach: The Time Conquerer, Wonder, Jul 32
 Fedor, Hasse, Flippo: The Return of Tyme, Wonder, Aug 34
 Kober: The Man Who Lived Twice, Amazing, Nov 32
 Madle: Devolution, Tesseract, Nov 36
 Manning: The Prophetic Voice, Wonder, Apr 35
 Mayer: Amazing, Jun 36, p 141; Tomorrow, Sum 38, p 15
 Miller: Sands of Time, Astounding, Apr 37
 Nicholson: Wonder, Feb 31, p 1050; Apr 31, p 1334-5; Astounding, Sep 31,
 Omnia: Paradox ++, Fantasy Magazine, Oct 34 p 428
 Rothman: Wonder, Jul 35, p 249
 Weinbaum: The Circle of Zero, Thrilling Wonder, Aug 36
 Weisinger: The Prenatal Plagiarism, Wonder, Jan 35

(Apologies if the figures don't turn out right: our first stylus work!)