ENERGEIA

SPRING 1987

THE HECKMAN BINDERY, INC. N. MANCHESTER, INDIANA

Cover:
ARES: "The Tremble and Scream of a Body's Undertow"
by Lance Connin
Pastel on Watercolor Paper
Photographed by Greg Ferguson

Printed by the
St. John's College Press

St. John's College
Annapolis, Maryland

ENERGEIA: The activity in which anything is fully itself.

ή . . . νοῦ ενέργεια ζωή . . . (Aristotle's *Metaphysics,* 1072b)

Energeia is a non-profit, student magazine which is published three times a year and distributed among the students, faculty, alumni and staff of St. John's College, Annapolis and Santa Fe. The Fall issue contains a sampling of the student work from the previous school year which the prize committees of both campuses have selected for public recognition. For the Winter and Spring issues, the *Energeia* staff welcomes submissions from all members of the community—essays, poems, stories, original math proofs, lab projects, drawings, and the like.

Note: A brief description of the author accompanies all work not by current St. John's students. Please include some such statement along with your submission. Thank you.

CONTENTS

A Criticism of Socrates' Theory of Knowledge

Fritz Hinrichs

In the Meno, Socrates is faced with the problem of how we can go about searching for virtue when we do not know what it is. He has to explain how we can search for something and know when we have found it when we do not know what to expect. It is similar to the problem we would have if someone said, "Go find my dog," and then refused to give any description of the dog. To solve this problem, Socrates refers to the belief expounded by the poets that our souls never die and have lived through many lives. This being the case, they can recall the truths they have gained in past lives. Our learning, therefore, is nothing but the spontaneous recovery of knowledge that was previously known.

To try to substantiate this idea, Socrates asks Meno to bring to him a slave boy without any previous geometric knowledge. He then proceeds to ask this slave boy questions about geometric figures that he draws in the sand. Gradually he leads the boy to an understanding of a particular train of geometric reasoning. First Socrates shows the boy why his initial idea about the geometric figure is wrong, and then he asks the boy questions until he comes to the correct understanding of the figure. Because he never tells the boy anything, but only asks him questions, Socrates claims that the boy has recalled the knowledge of the figure from his own mind.

Now, if all our learning were recollection, then one would expect that our learning would resemble the way we recollect things that we have learned in this life. This is one point where I find fault in Socrates' theory, for the process that Socrates uses to teach his student does not at all appear to be the same process one experiences when recalling other facts one knows one has forgotten. It can be seen that the boy never really recalls anything from his own memory; he only approves of the ideas Socrates presents to him. If he truly were recalling the ideas from memory, Socrates would only have to give him little hints, and the boy's memory would do the rest, just as our memory does when we recall things that have become dim in our minds. Instead, we see Socrates lead the boy through almost every step of the geometric argument, and the boy obediently following behind. This can be well seen in the second part of the discussion in which Socrates corrects the boy's misconception that one can double the area of a square by doubling the length of the sides. Socrates erases his old square and starts with a new one to show the boy that the base of a square twice the area of the square he drew would be the square's diameter. He shows this by constructing three other new squares around the one he had drawn and dividing each along its diameter to construct a new square that is made up of the diameters from each one. Because there were four squares, the new square is twice the original (four halves make two). This whole construction is made by Socrates with the boy contributing nothing to the argument beyond his consent. When Socrates finishes constructing the figure, he asks the boy some questions that require more of a reply than "yes" or "no."

> SOCRATES: Here are four squares. Has not each line cut off the inner half of each of them?
> BOY: Yes.

SOCRATES: And how many such halves are there in the figure? [The figure made by the diameters of the squares.]
BOY: Four.
SOCRATES: And how many in this one? [The original square.]
BOY: Two.
SOCRATES: And what is the relation of four to two?
BOY: Double.
SOCRATES: How big is the figure then? [The one cut off by the diameters.]
BOY: Eight feet.
SOCRATES: On what base?
BOY: This one. [The diameter of the original square.] (85a-85b)

In this quotation, Socrates asks the boy six questions. In the first, the boy consents that a diameter cuts a square in half. In the second and third, he counts how many triangles are in particular squares. His response to the fourth and fifth shows his knowledge of ratios, and that to the sixth his knowledge of what a base is. I hope this quotation adequately shows that the reasoning the boy goes through does not originate from himself, but is the product of Socrates. What occurs in this dialogue is certainly a far cry from the boy's needing a little prodding to remember those things that are obscured by the forgetfulness of his mind. In 84d, Socrates infers that his method is closer to the interrogating for opinion than to instruction or explanation, but in fact the opposite seems to be the case.

However, part of what Socrates says is correct. He repeatedly tells Meno that the boy's opinions are the boy's own; this is reasonable in the sense that Socrates never forces the boy to believe in anything. But the opinions are not the boy's in the sense that he made them up or had previously consciously held them. It is reasonable to say that the boy agrees with what Socrates is saying, but not that he already knows what Socrates is saying; if this latter were the case, Socrates would not need to be continually telling the boy how to deal with the problem of the square.

Also, if we are to say that the boy understands something because he recalls it, how would we account for the mistakes he makes? For example, the boy proclaims that if the side of the square is doubled, the area will double. How could the boy come up with this idea if he recalled it? This is what he recalled, so how can it be wrong if recollection is what determines truth? Socrates would probably answer this accusation by saying that the boy recalled incorrectly or that he did not recall at all. I think a hint to what his response would be can be found in line 82e. I will present two translations that from my inquiry seem to represent the two ways that this passage is typically translated: "Now watch how he recollects things in order--the proper way to recollect." (W.K.C. Guthrie) and, "Watch him now recollecting things in order, as one must recollect." (G.M.A. Grube). The actual Greek is "θεῖ δὴ αὐτὸν ἀναμιμνησκόμενον ἐφεξῆς, ὡς δεῖ ἀναμιμνήσκεσθαι ." (82e); the pivotal word is δεῖ . If Socrates admits there is a proper or correct way of recollecting, he is implying there is an incorrect way of recollecting. Now, if we call some recollection proper and some improper, then there must be something by which we are evaluating it by; there must be something higher. To make a judgment would be meaningless if there were no criterion. This is why I think Socrates is not using recollection as his ultimate source of truth, but is using something else, most probably reason, as his final criterion. The word δεῖ can be translated as proper or necessary (the two translations give examples of each). If it is translated "proper", then my idea is supported, but translating it "necessary" does not really escape the problem either. Why should something be necessary? Is it not because we have an end in mind by which we are evaluating the process? I think Socrates has

shown that he is not really relying on what he calls recollection, but is actually using reason to get the results that he wants.

There is another problem in Socrates' theory that needs to be addressed: when Socrates states that we learn by recollection, he is not really solving the problem of how learning came about in the first place. He may say that we learn now by recalling what we learned in the past, but that does not tell us how we learned in the past. The only thing that his theory does is to push the problem back into the past where it might not occur to us to think about it. This way of dealing with the problem would be like trying to answer the problem of the origin of life by saying that it had been placed on the earth by outer space life-forms. This method is evasive but not substantive. However, since Socrates seems to do so well using myths, I suspect he could have easily answered this objection by stating that when man first came into being he was endowed with perfect knowledge and has since lost it.

Socrates is able to convince Meno of his theory because it does make a comparison that is superficially correct--when we remember something and when we see something is true, we tend to experience the same feeling of insight or perception. We experience the same sense of "Aha" when we remember and when we gain understanding, so it is tempting to see them as coming from the same source. But to equate them does not really answer the problem of where learning came from to begin with; moreover, when more closely examined, remembering and understanding have some distinct differences that rule out their being one.

Theseus' Passage

Claudia Probst

Theseus, kneeling by the slain monster
picked up the trail of a golden thread
and followed it, wearily,
through the dim eternal twilight of the labyrinth.
He wound it over and between his knuckles,
the sweat of his palm matting the thread,
darkening the filament of his direction
and enclosing the heat of his hand.
He recalled his fingers entwined in his mount's mane,
after grasping suddenly for lost balance
when shame had made him sway in the saddle,
on the day he saw his father
surrender the city's youths to the Minotaur.
Later his hands had traced the curving wooden ribs
of the prison ship's hull during the voyage to Crete,
and mesmerized his seasick companions
with endless soothing caress.
So long did his hands travel circularly on their backs,
waiting for gasping nausea to subside,
that in darkness he could name each
by resting his hands lightly on their sides,
touching for the duration of a breath.
He felt the thread's tension, more than guide
it impelled him, tugging at his memory
-sunlight and sweet air-
Theseus longed to follow his eyes
frontwards as Man,
to probe then where a man may.
He remembered in those passages
the dark servant halls of his home,
nights in his early youth
when, trembling, he had eased blindly down stone steps
fingertips brushing moss along rough walls
groping his way to she his destination.
Images of her bare limbs' movement, first stolen
through a crack in the wall of the servant bath
had rooted in his mind.
And when he first clasped her to his breast,

his pulse had quickened, hammering in his ears
until her image, blooming, had threatened
to burst from his head
shattering the night with strong
remembrance of sun on olive skin
and the play of her muscles underneath,
as she lifted an earthen water jar.
Then it was no longer the still air of the labyrinth
and memory that enveloped him
wind-driven dew struck his forehead and
he emerged again into the living world-
To find Ariadne, her hair unbound falling
loosely golden in the blessed dawn.

The Boundary of the Method

Sally Fine

In Book VI of the Republic, Plato discusses the geometer's use of the figures and the three forms of angles as hypotheses and asserts that the geometer uses these hypotheses as the basis of his argument. That is to say, the geometer takes certain properties as common notions and from those common notions stem the images in geometry. In addition to this assertion, Plato continues by asking if geometers use:

> visible forms...and make their arguments about them [visible forms], not thinking about them, but about those others that they are like? They make the arguments for the sake of the square itself and the diagonal itself, not for the sake of the diagonal that they draw, and likewise with the rest. These things themselves that they mold and draw, of which there are shadows and images in water, they now use as images, seeking to see those things themselves, that one can see in no other way than with thought. (510e)

Plato's account of the geometer seems an appropriate description of Euclidean geometry, but hardly applicable to the realm of geometry which Lobachevski provides.

In Euclidean geometry we are provided with images that we consider to be intuitive. The pictures that accompany the propositions fit the image of the figure we have in our minds. The pictures fit so well that one might wonder if Euclid might be 'spoon feeding' us by appealing to our intuition of how space should be defined and described. It is easy to lose track at times that what we actually see before us when we work through a Euclidean proposition is not square or triangle, but the image of square or triangle. It is important, however, to remind ourselves of what Plato suggests, that as long as geometry depends on hypothesis, it can never really grasp square or triangle. I interpret this to mean that, unless we can move beyond hypothesis, we can never grasp the eidos of square or triangle, but must content ourselves with their images.

In the imaginary geometry that Lobachevski gives an account of, the images provided certainly do not 'spoon feed' our intuition. Few things are more counter-intuitive than parallel lines that converge or a quadrilateral with three right angles and the fourth angle acute. The images that accompany Lobachevski's theorems seem almost incommensurate with the language of his geometry. It is very difficult to convince oneself, after years of being led to believe that parallel lines never meet and remain equidistant from one another, that the two lines depicted as converging can really be called parallel. Although we see the images before us on paper that illustrate converging parallels, in our minds we still imagine parallel lines that do not meet and do indeed remain equidistant. In Lobachevski we have a discrepancy, between the image on paper and the image in our minds, that we did not have in Euclidean geometry. How does one look at the images provided with the same language used in a completely different way and make sense of it?

The first reaction, and certainly a legitimate one, is that the system that Lobachevski introduces is counter-intuitive. Well, yes, it does seem awkward to be

given a quadrilateral with three right angles and then to be asked to prove the fourth angle acute. This does not come easy because in all of our previous experience, a principal property of the quadrilateral was that the angle sum was consistent. However, now that we are in the world of imaginary geometry, we no longer have that proportionality, and that is disconcerting.

At this point I don't know whether it is right to question Lobachevski's idea of geometry or to question our own. Euclid gave us a beautiful system of geometry, but he never claimed it to be more than a system. He offered us images, and we took to them eagerly, again, forgetting that he offered us image, not eidos. Plato reminds us that the geometer can only offer us image in his discussion of the geometer's use of hypotheses. I don't think that Plato is judging whether the geometer is justified in using hypotheses, but rather he is pointing out the problem that all geometers face in being limited by the common notions. The boundary lies in being human, a limit that we cannot surpass. Euclid and Lobachevski, if nothing else, at least share this boundary. I think that the geometers themselves are much more willing to acknowledge this boundary than the students of their geometries. Why are we so unwilling to accept Lobachevski?

First let us examine what it would involve to accept Lobachevski's system. The obvious thing that comes to mind is the denial of the necessity of the fifth postulate. Once one denies the need for the fifth postulate, one must acknowledge that Lobachevski's geometry is certainly as feasible as Euclidean geometry.

Of course, this is much easier said than done. How can we possibly acknowledge a geometry other than Euclid's when we quite obviously live in a Euclidean world? Everything that surrounds us is Euclidean. Is it because we are surrounded by Euclidean images that we come to expect Euclidean images in our geometry as well? After all, what is our real problem with Lobachevski? His images are consistent within his system, so we can't find fault there. His theorems follow in logical progression and still we balk. Consistency and logic aside, his system still goes against our expectations. We have been habituated to Euclidean geometry, and that is what we expect.

Although I readily accept the argument that Lobachevski is counter-intuitive, I am still puzzled by this intuition that we cling to so desperately. Do we really have the criteria to determine our world as Euclidean? I hesitate to make this claim when I consider, once again, Plato's discussion of hypotheses. It seems impossible to deny that there are certain things which are inexplicable and those things we call common notions. I want to call them self-evident, but after studying Lobachevski and re-reading Book VI of the Republic, I wonder if we only intuit them to be self-evident. This question is seemingly rhetorical, considering that we are bound by image. If we could actually get to eidos, then we would truly grasp geometry.

Apparently, the methodology in the activity of geometry is our problem. Plato seems to make an argument for the method of dialectic. In dialectic we begin with an hypothesis and match it with an antithesis. The struggle between the two eventually produce some sort of conclusion or falling out of a bigger idea. No matter what the outcome, one is able to get beyond the hypothesis. Some progress is made. With the geometry, however, we are bound by the hypothesis. No antithesis is presented in opposition to the common notions. We can build and build our system, but the hypotheses that Plato mentions time and time again remain. Using the methodology of geometry as we do, we can never approach eidos which is free of hypotheses.

On William Butler Yeats' Poem "He Thinks of His Past Greatness When a Part of the Constellations of Heaven

Anne Leonard

I have drunk ale from the Country of the Young
And wept because I know all things now:
I have been a hazel-tree, and they hung
The Pilot Star and the Crooked Plough
Among my leaves in times out of mind:
I became a rush that horses tread:
I became a man, a hater of the wind,
Knowing one, out of all things, alone, that his head
May not lie on the breast nor his lips on the hair
Of the woman that he loves, until he dies.
O beast of the wilderness, bird of the air,
Must I endure your amorous cries?

William Butler Yeat's poem "He thinks of his Past Greatness when a Part of the Constellations of Heaven" is a poem which is hard to understand on the intellectual level but which strikes deeply into the human heart. What stands out in the poem more than anything else upon a first reading is the tone, and the meaning itself is dependent upon the tone.

The poem is sad. It is not raging, burning, passionate grief, but more gentle, implacable sorrow--embers of grief which will never go but will remain, ceaseless and unchanging. The very first hint of sadness occurs in the title; someone who has become a constellation, who has become part of heaven, is thinking not of present glory but of past greatness. The feeling is then brought out more in individual lines of the poem.

In the second line, the second word is "weep." This, a tangible and open expression of sorrow, is coupled with "because I know all things now" and as such furthers the sadness. It is a human desire, wish, aim, to know, and this knowledge makes the line sad in two senses: first, things that are learned can be sorrowful and second, in the deeper way the fulfillment of a dream can be sad, even painful. Sadness occurs too in the fact that knowing all things, the speaker is no longer human; he is something different. With knowledge, humanity is lost, and that is reason for grief. In this line, there is regret, regret for having "drunk ale from the Country of the Young" and thus learned all things, leaving no mysteries or secrets, and regret for the actual things learned.

The relationship between knowledge and sorrow is expressed in another manner in the seventh through tenth lines:

I became a man, a hater of the wind,
Knowing one, out of all things, alone,
that his head
May not lie on the breast nor his lips
on the hair
Of the woman that he loves, until he dies.

Here the knowledge is of only one thing, yet that thing--loneliness--is so great, so powerful, that it brings sadness. The sadness is felt not only by the speaker, is not only empathetic grief for the poet, but is a reawakening of individual, human sorrow; everyone has known loneliness and estrangement. Indeed, the word that those four lines focus on is "alone." It is difficult to tell from the grammar of the eighth line whether "alone" modifies "one" or "man," but this difficulty is exactly the purpose of the vague syntactical structure: "alone" applies to both. The one thing a man knows is that he is alone. Whether a man or not a man, knowledge brings grief.

The last two lines, "O beast of the wilderness, bird of the air, must I endure your amorous cries?" are an expression of the sorrow, a plea for surcease. Being a man, he is denied the love and the companionship that the beasts have, and this brings grief and pain, pain that others have what he does not. The cry is not one of jealousy or anger, but of helplessness and deep loneliness. Even taken by themselves, the lines are sad, and as the last two lines of a sad poem, they round out the grief and the sorrow.

Sadness is not the only emotion expressed in the poem, however. Another is one of captivity, of helplessness. This is evident not only in the language but in the structure of the poem; it has a fairly rigid ABABCDCDEFEF rhyme scheme, the only appropriate rhyme being between "mind" in the fifth line and "wind" in the seventh. Although the rhyme scheme is not the most dominant expression of captivity, it serves to lock in the feelings and reinforce the captivity present in the imagery.

The very first image of captivity occurs in the first line, "I have drunk ale from the Country of the Young." Ale from the Country of the Young is ale which controls and changes a person, and although the drinking itself may have been volitional, the effects of the drink are beyond the power of the drinker. It is a subtle image, one which does not present itself at first for what it is, but which sets the captive tone for the rest of the poem.

The very next two images presented, the hazel-tree and the rush, are images of captivity or helplessness. In the lines

> I have been a hazel-tree, and they hung
> The Pilot Star and Crooked Plough
> Among my leaves in time out of mind

the haze-tree is not acting but being acted upon. Long ago the tree stood, and the stars were hung by some unknown "they" amidst its boughs; it did not hang the stars itself, or even choose which one were hung. It stood and was used. Likewise the rush is helpless; "horses tread" it. A horse is an image of freedom, of wild grace, and the rush is that which is repressed, pushed down by the free. Like the tree, the rush is a passive, emotionless thing of nature which is only acted upon.

And then there is the man, "a hater of the wind." This hatred is a rejection of and resentment of freedom. Wind is wild, powerful, reckless, goes where it wills when it wills. Wind can destroy, wreak havoc, ruin. It is uncontrolled. One who hates the wind hates that total, raw power and does not know the exhilarating joy present in a wind dashing wildly through the trees. Unrestrained and unrestricted, the wind is a symbol of all that is free and of all that that freedom means. Hating what is free, the man is not free.

The final image of captivity is expressed, like the sorrow, in the plea of the last two lines. The beast and the bird are like the horse and the wind; they are free, unfettered. It is to the "beast of the wilderness." the animal that lives wild, subject to no rule but its own, and to the bird of the air," that animal which lives among the wind, that the plea is addressed; these things which can love are free, and which are free, can love. Nor is the object of the plea the only way that

captivity is expressed; the word "endure" is one which applies to a prisoner. One who is free would not have to endure the amorous cries; one who is free could leave, or could vanquish the cries. But that the cries are endured is an indication that they cannot be escaped.

Sadness and captivity are the dominant emotions, the first impressions which leap from the words into the heart. These are what the spirit understands. But there are things underlying these emotions, reasons for them, and they are buried deeper in the poem. Even understanding the tone, the poem itself is still an unresolved puzzle.

There are two questions which seem to contain the core of the matter. The first involves the "Past Greatness" and the second the separation of the man from the woman he loves until after death. There is sadness involved in both questions, and a sense of being trapped.

"Past Greatness" seems to refer to being a hazel-tree, a rush, and a man. These are all things which have been, which the speaker became, which are no longer, and for which there is some grief. None of them seems particularly great, yet there is reason for sorrow; they have one thing which a constellation does not. They have life.

A hazel-tree and a rush have sprung from the earth, have been nurtured by the sun and the water and the soil, have grown and changed and developed and will continue to do so. Attached, they belong to the world and to each other and to all living things. They may be helpless, they may be controlled, but they belong, and this in its own way is far greater than being a constellation, fixed, immutable and completely unconnected. Better to have the stars amongst one's leaves than to be a star; for a star is not alive. In a way, the constellation is even more a captive than the rush and the tree, and this too is reason for sorrow.

And why a man? What greatness is there in being a man, in hating the wind, in knowing one terrible thing? There seems to be no inherent greatness but inherent grief in this. Yet, there is something in the man which is as great as or greater than the hazel-tree and the rush.

Perhaps it is as with the rush and the hazel-tree. Living, no matter how terribly, is greater than being a constellation. However, it seems that there must be something deeper than that. A man is not so connected to the earth and to the world as a plant or even a wild animal is. In addition to living, a man thinks and knows. Feeling sorrow, feeling captivity, are things which a man can do and a rush cannot. It is these, the feeling and thinking as well as the living and connecting, which make a man great. It is a sad, painful, captive existence, but it is an existence which is unique and wonderful.

That seems to give some answer, inadequate though it may be, to the first question, the question of "Past Greatness." The second question, the question of love, still remains. Why cannot a man be with the woman he loves until he dies? The most simplistic, obvious answer--the woman he loves is already dead--just does not seem to do.

The loneliness is part of it. The loneliness is two-fold in nature; first, the man is lonely because he cannot be with the woman he loves, but second, he cannot be with the woman because he is by nature alone. Only in death can the solitude of self be broken. This part of human nature, this loneliness, exists in several different ways.

The human race itself is separate from other animals and from nature by means of language and rational thought and technology. Other animals have societies, forms of communication and of tools, but none so sophisticated, and no other animal can change the face of the earth in the way a human being can. This separates the human animal from the earth and from the other animals; to be human is to be separate.

Further, every individual is alone. The soul of each person is unique. At the

very center of the self is something which only one's own soul, and sometimes not even that, can understand. There is separation from other people and even from oneself. Nothing, not even love, can cause the centers of two individual souls to coincide, and in some deep, almost terrifying way, every human soul is always solitary and lonely. This seems to be the loneliness Yeats is expressing.

To say that a man cannot be physically close to the woman he loves is, on the literal level, ridiculous. But it is metaphorically quite true; the laying of the head on the breast or the lips on the hair are metaphors for human companionship, for unity, for mind to heart and speech to thought. Only after death, when humanity is exchanged for something else, can such companionship be. The knowledge the man has is the knowledge of his own loneliness; he is captured by his very nature.

What, then, is the meaning of the poem? It certainly cannot be captured in one single sentence or phrase. The essence of it is both sorrow for loneliness, and lack of freedom, but also the greatness of life itself. The poem has to do with the struggle to find one's place in the world, and with the pain that knowledge brings, whether it be knowledge only of one's nature or of all things. More than anything else, it shows the paradox of humanity: how hard but how essential it is to be human, how painful and how great, how separate and how connected. And this seems to be why the tone, expressed through images, is understood before the reasons underlying the tone. The poem is the speech of one human to another, the expression of common feelings. And so, like the human soul, the poem is a paradox; by its expression of human loneliness, it touches human connectedness. Thus there is greatness to think of when a Part of the Constellations of Heaven.

A Partial Defense of Viconian Etymology and Tour Guide to Southern Maryland

Christopher Bailey

Preface

By the terms ordinary etymology, scientific etymology, etc., I mean the use of scientific rules of word-mutation and language comparison to trace the development of words. Or at least I mean something like that. Any other words I use ought to be comprehensible from the context in which I use them; it's very likely that there are some which aren't, but I can't think of everything.

The fundamental argument of this paper is that ordinary etymology is not adequate for the complete understanding of a word's history, and of its effect on the people who speak the language of which it is part; and that therefore Vico's attention to superficial similarities in words should not be lightly dismissed. This brief prefatory statement may be used as a map and compass to guide the reader out of the dark and trackless digressions which lie in his way, and which might otherwise persuade him that the author of this essay has never quite decided what he's talking about.

"Port Tobacco," says the Maryland Writers' Project guide to Maryland, "was the most important of the many Maryland ports on the Potomac ruined by the silting up of the creek at its landing. Made the seat of Charles County in 1658, it continued to be the center of the county government until La Plata developed around the new railroad down the peninsula. The Indians also considered it a desirable village site, as Captain John Smith's map shows; and by 1681 it had enough settlers to be the scene of the uprising of Kendall's followers."

The name "Port Tobacco" is not a terribly unlikely one for a colonial Maryland port town, since tobacco was probably Maryland's most important export. But Captain Smith's map shows an Indian village on the same site before any English settlers had planted themselves there. One might have expected the Indian name of the town to survive, as the names of other Indian towns did in Maryland, and as the name of the river on which Port Tobacco was built--the Potomac--survived.

In fact the Indian name did survive. For these were the Potopago tribe. Their name was attached to their town, and when the English began to settle there, it was rapidly corrupted into its present form. It was quite natural for it to be so corrupted. The wonder would be, if anyone who was not making a special effort to speak distinctly should mention a tobacco port called Potopago, that any ordinary listener should not understand him to have called it Port Tobacco.

Now, if one wanted to trace the etymology of the name Port Tobacco, one might go about it in the normal way. One might first look up port, and find that the Rev. Dr. Skeat traces it back to the Latin portus, closely allied to porta, from conjectural root par, to pass through, and thus eventually related to English fare. Then one could do the same for tobacco (where one would have less luck, since, the word being derived from a West Indian language, its ultimate roots are inaccessible to the Rev. Skeat). One could do all that, and one would be no closer to the truth than when one started. Obviously, without the critical knowledge that the place was originally a Potopago Indian town, any derivation of its name will be at best only partly correct:

for it would be misleading to give a derivation based on the meanings of the words in the name without noting that those words only came to be assigned to that place through corruption of its Indian name.

On the other hand, it would be equally misleading to say that the name is a simple corruption of the name Potopago without taking into account the meanings of the words port and tobacco. For the town was a port where tobacco was shipped, and that is why the corruption arose in the first place. It would be just as useless to study the etymological history of the name Potopago as it was to study the histories of port and tobacco. What is most necessary is an understanding of the conditions which led to the choice of the name Port Tobacco for that particular place.

In his New Science, Giambattista Vico often uses the etymology of a word as part of his argument. He doesn't seem to have much of a method for his derivations: the one factor common to most of them is incorrectness. If Vico wants to say that a certain word actually developed in history in a certain way, he ought to have some scientific methods for determining that development. Otherwise he should keep his mouth shut. At least, that would be my attitude as a twentieth-century admirer of the accomplishments of scientific etymology.

But Vico may not have seen etymology quite the way I do. He certainly was not aware of the scientific methods which came into use after he was dead. But he may not have had in mind the same purpose I have when I search for the one true historical root of a word.

Anyone who pays attention to the etymologies in the New Science is bound to notice that, within a few pages, Vico gives two entirely different derivations for Homer's name. First he says (852),

> By the etymology of their name from the two words which compose it, rhapsodes were stitchers together of songs, and these songs they must certainly have collected from none other than their own peoples. Similarly [the common noun] homeros is said to have come from homou, "together," and eirein, "to link," thus signifying a guarantor, as being one who binds creditor and debtor together. This derivation is as far-fetched and forced [when applied to a guarantor] as it is natural and proper when applied to our Homer as a tier or putter together of fables.

And then, not much later (869): "Tradition says that Homer was blind and that from his blindness he took his name, which in the Ionic dialect means blind."

If Vico is, as he seems to be, offering each of these as the derivation of Homer's name, then he has certainly contradicted himself. The most fundamental laws of logic would seem to insist that only one of the two could be true.

Possibly Vico, composing these paragraphs at different times, didn't notice the contradiction: perhaps one derivation seemed right to him the first time, and then later the other. But he did let both stand in the third edition.

There are infinitely many other possible explanations of Vico's motive in giving these two different derivations, but, skipping entirely the question of Vico's real motive, I shall try to invent a plausible defense for him.

If Vico acutally has discovered the true Homer in the Greek people themselves, then there must be some reason why the name Homer was associated with the Iliad and Odyssey, and not the name Orpheus or Dobzhansky. In fact, we must look for a reason why any name at all was given for the author of these poems, when their real author was a whole nation.

Perhaps Homer became a sort of poetic universal for epic poet, as Hercules for strength or Achilles for swiftness, because there was once a rhapsode named Homer who was extraordinarily good at rhapsodizing. Thus, in the same way that stories of superhuman strength might come to be associated with the name Hercules, eventually giving us a Hercules who travelled to all places at all times and did just about everything; so epic poetry of great quality might become associated with the name Homer.

But even if this were the true explanation, it might not quite explain why the name of Homer and not that of some equally proficient rhapsode became the poetic universal. In the case of Hercules, the name itself had significance. Perhaps it was thus in the case of Homer.

Let us suppose that there are two rhapsodes in ancient Greece, both equally admired; one of them is named Homer, the other Dobzhansky. Now, to the Greek ear, Dobzhansky might not suggest much. But Homer--Homer is a name fraught with associations. An Ionian would immediately hear the word as blind, and immediately would remember the rhapsodes he had known who were, if we can believe Vico (who takes his evidence from Homer), commonly blind. The name would seem as appropriate as some I have noticed in businesses in Inverness, Florida, where on the same street one can find Grumbling Motors, Crook Real Estate, and Hood Bail Bonds. Those names don't slip out of memory easily. I can't remember the name of any other bail bondsman, though I have doubtless seen many who displayed prominent advertising signs; but the name of Hood Bail Bonds is ineradicably stamped in my memory.

Similarly, one who happened to be thinking of the strung-together aspect of the rhapsodes' tales might be led to hear, though perhaps not altogether consciously, hom'eirein when the name Homer was spoken. If an English speaker heard of a poet name Stringtale, he might have the same reaction. Just so the name Shakespeare often suggests to us, without our being aware of it, a vigorous, thunderous, rugged sort of drama that a name like Jonson doesn't suggest. (In fact some of his contemporaries made the most of Shakespeare's name, believing that entirely too much spear-shaking went on in his plays). In the same way, some theorists have suggested, any person's name carries with it a package of vague associations which partly determine the way we react to the person who carries the name. I have heard of some studies which seemed to indicate that school teachers had predetermined conceptions of their students according to the students' names. And I remember how I was often shocked in elementary school when I learned a teacher's first name. (She didn't seem like a Mavis to me, I might explain.)

Now, ordinarily these associations of names with character types might be specific to me only, depending, perhaps, on events in my individual experience. (I might, for example, have known a Mavis in early childhood.) But there might be certain cases in which the name was likely to produce a similar group of associations in all the members of a certain culture--as Mr. Hood, Mr. Grumbling, and Ms. Crook can probably attest. This might especially be the case when the name resembled some common word or set of words.

Contrast the effect of the name Homer with the effect of Dobzhansky, and it seems obvious why Homer would become the poetic universal and Dobzhansky would be forgotten. Homer simply suggests poet, and suggests it in more than one way.

Thus Vico's two "derivations" of the name Homer both would add to our understanding of how that name came to be associated with the author of the world's greatest epics. As derivations in the strictest sense, they might not be historically correct, but they might help explain why the name was applied as it was in the same way that a knowledge of the meanings of port and tobacco helped explain the name Port Tobacco, though history may tell us that the name is actually a corruption of Potopago. And for that reason that one "derivation" need not exclude the other. For both may have operated on the common sense of the Greek people in driving them to select Homer as the name of their national poet.

What is true for names we might suspect of being true for any word. For we find we have more to explain, even in ordinary words, than simply how a basic root was changed into its modern form. Knowing the etymology of the word lift or the parts

from which elevator was coined will not explain to us why the first is used in one part of the English-speaking world and the second in another. The same goes for lorry and truck or solicitor and lawyer; and, taking a broader look way and chemin, since French and English are supposed to be derived from the same ultimate source. Why does one society choose one root to build its ways on and another choose another? I have often heard it asked why the same word should have different meanings, but it seems to me just as interesting to ask, Why does the same meaning have different words?

Ordinary scientific etymology is of no use in answering this question. A new etymological science would be needed to supplement the old. Perhaps no science at all could be adequate: perhaps this is a field for wild speculation. I don't ordinarily like wild speculation as a method for finding answers to important questions, but it is at least more useful here than the ordinary etymology. The rules of vowel-shifting and consonant mutation and such are simply not applicable to this question: one might as well try to answer it by referring to a yardstick or Ptolemy's Table of Chords. The laws of etymology have been spectacularly successful in showing the historical mutations of words; now what we need is a sort of transcendental etymology to fill out the picture.

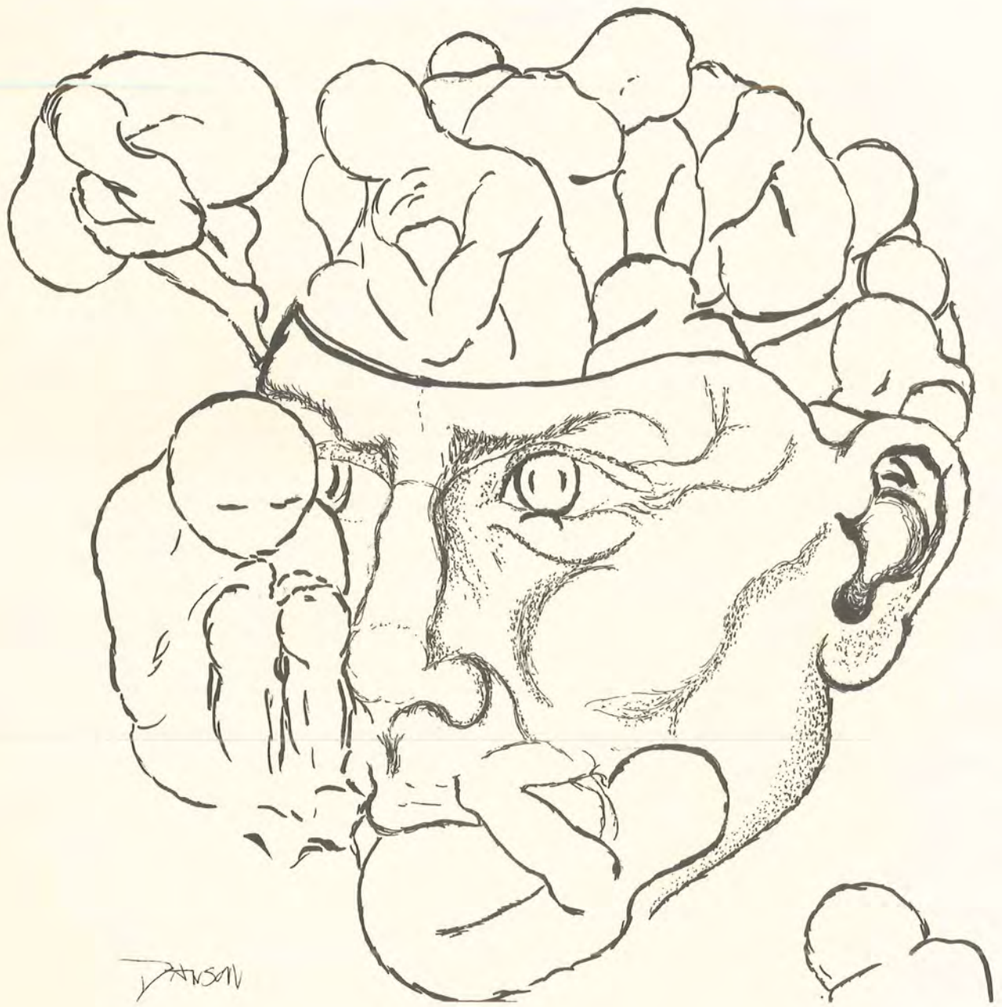
We already practice this transcendental etymology, although we really have no method for it. If we ask why the word gay as a synonym for happy has almost disappeared from our spoken language, no rules of word-mutation will give us an answer. But we probably can answer the question for ourselves by pointing out that the word has come into use as a synonym for homosexual, and that in our society homosexuality is an embarrassing subject. We used no scientific procedures to determine that answer: it simply seems obvious to us from what we know of American society.

Vico's method of etymology seems to us today to be crude and sloppy. And it is. For I believe Vico usually wants to tell us the way a word historically developed, and modern scholars could offer very convincing proofs of the wrongheadedness of most of his derivations. But perhaps in back of Vico's mind there was an unformed idea or assumption that the true historical development of a word was not its only important story--and perhaps not its most important for his purposes. The similarity of one word to another to which it bears no historical relation might in fact have a great effect on the use of both words, and might not otherwise be associated. Modern etymology might tend to persuade us to ignore such similarities as mere coincidences, but they ought not to be so easily tossed aside. I regret that I am completely unable to provide a scientific method for dealing with such similarities when they are noticed; but we should not close our eyes to extra-etymological considerations when non-etymological relations suggest themselves. And therefore we should not pass over Vico's "derivations" as if they were mere embarrassments. Many of them may be totally worthless, but in some of them may lurk a social truth inaccessible to scientific etymology; and if he uncovered even one such truth, then Vico's wild speculations were not entirely in vain.

Distance #2

Stacy Grimes

O wet day
blanket-of-deep-forest-green day
steam, my body is spice tea, I curl
I am the Sun the Center, heat I am
pulling o tugging o Venus I want
smashed into betwixt me to be me
but all and every ring around
me rosy. Stasis, stance
in this and in all wet days I am
the Sun
o shining Sun.



Chicago Labyrinth

Ellen Schwindt

feet thud on wettish
concrete slabs of buildings
building song no
rhythm is forced by metronome
of traffic light the loop
rumbles softly a lofty
thought sways in
blue chiffon dances
a spectral jazz sandal
softens upon the area above
my head my
foot sweeps into someone else's
space no one screams for
air accepts suffocation with
welcome coffee yes please lines
becomes a sweeping ellipse of
warmth dark purple apathy to
fluorescence Emily creeps
around the fringes repeating the bit
about frogs unintelligably through
saxophone slur of
brown corner booths
tea and roses drifting darkness
is becoming sweeping
around mouths
open in effort to breath
thick air eyes
swell to almost
open ended corridors
of sea fog fading black

Origins of Cohesive Thought

Lawrence Seidl

INTRODUCTION

Philosophy is an analytic endeavor. It takes things apart and looks at them, and in a way this artificial mental reading irrevocably changes the things it looks at. One never loses the insights that are gained through philosophical analysis. Even if one chooses to give up philosophy, the pursuit of its questions leaves an indelible impression--its effect, as belonging to one's experience, is present in every subsequent endeavor. Perhaps the only real philosophical synthesis available to humanity is the acceptance of the ever more potently described limits of thought that thought itself struggles with. The acceptance might lead one to leave the study of philosophy and to incorporate it simply and completely, living the question rather than asking it.

But here the challenge is in the asking. The question that brought me to this paper was: What is in the "space" between the steps in a logical sequence? The question forces me immediately to look at the language that such a series could be described in. Say, for example, that I examine a series of statements and judge that they follow logically, one after another. It is the logical rigor of the series that I am concerned with testing, and not the content of each statement, which, as language, depends on the rules of linguistic construction. How am I testing the logical rigor of the sequence, what do I mean by logical? This is a basic question, asked in simple language. "What I mean by logic" is an expression for one thing. It is the thing to which we refer when we use the word logic. We think of it usually as a criterion by which we judge thought as "making sense". Kant says, the science of the rules of understanding in general, that is, logic."[1]

Any series of statements seems susceptible to being made more logically coherent and rigorous, by filling in the "spaces" between with other statements, making a new series which more thoroughly explicates the necessity of the steps. The aim of this would be to understand better. This filling in can go on until it becomes ridiculous--the understanding that resulted from the initial series becomes confused and the process begins describing itself. Language, when its logic comes into question, begins justifying itself, turning inward, and describing its own limits. Logic is not language--it is independent of its description. We <u>can</u> make a progression more logical with language, but we are limited by the dependence that language has on logic. At a certain point, we will use up the empirical content; no more actual detail will be available. The logic of the progression will remain unexplicated, and we will be left only with an unsupportable affirmation of the necessity of logically stepwise movement.

For Kant, considering a series of statements as following logically is an example of the subsumption of the concepts contained in the statements by pure, a priori concepts of the understanding, that is, categories. His assertion is that this subsumption is necessary if there is to be any thought at all. In order to substantiate this assertion by showing it is logically correct, and thereby proving it is true, it would seem that he must explicate the necessity of the categories for thinking. Now the idea that thinking must be proved categorical is itself a categorical

thought. "The completeness and articulation of this system [of pure understanding] can at the same time yield a criterion of the correctness and genuineness of all its components."[2] On the face of it, categorical necessity wouldn't seem sufficient to prove that thought is categorical, just as language, a logical construct, doesn't ultimately serve to explicate logic. Logic and categorical necessity themselves require to be made necessary by something more coherent and more necessary, from which they can derive their power.

The search for this ground can take place only on the edge of meaningful language. The language of the search is admittedly insufficient for the task of explaining its quarry, and at some crucial moments must rely on its ability to point, to imply the ultimate coherence and necessity that must validate thought. Kant's own language suffers these weaknesses, and yet it resounds with the power of its rational intent. The completeness and coherence of the system speak for the power, while at certain points the rules of language represent an obstruction to Kant's clarity of intention.

The ultimately coherent source of logical necessity is the synthetic unity of apperception. In trying to make this unity an "object" of my thought, I must, it seems, deny the use of those elements of thought which depend on it for the necessity of their existence. This puts me very near the "I", in the immediate logical vicinity of the noumenal center of my being. It makes me feel alone. In what follows, I have presumed to begin with unity, itself the seemingly logical beginning of thought. I have attempted to explore Kant's treatment of this function of unity, and to give a sense of where we are in relation to the "I" we cannot know.

I. A. Preliminary and purposely naive examination of the relation between unity and thought.

Reason is the unified faculty which binds our mental activity into what we call thought. Its singularity reflects the unity of the thinking subject in which it is housed. Reason views the subject's body of knowledge as one comprehensive thing, a manifold of systems of understanding, each of which contains subordinate systems of concepts. Since systems and the concepts are themselves considered as whole things, this suggests that the manifold into which reason unifies them need not be considered as a whole at every moment in our thought. We are not thinking all our knowledge at all times. Our body of knowledge, and the subordinate wholes within it, are all susceptible to analysis. Indeed, the large encompassing order that reason prescribes is its fullest end, and we rarely have any sight of its oneness. This is because our understanding does not always succeed in its effort to secure fully unified concepts. We possess concepts which seem incomplete. They contain strongly associated impressions but their boundaries are not clear, and they are thus not fully unified. These concepts present problems to reason's goal of unity.

Since reason is a faculty acting on already unified wholes, a question presents itself. What is the relation between the unity of the concepts considered as parts, and the unity of the system of reason? Do the unities we see in each share a common source? Thinking of reason as subsuming the understanding, fully contained and extended within itself, we may also consider both faculties as concentric around a central unity, from which the unity of each is derived. Since concepts are ultimately formed from the chaotically independent world of pre-appearance, and therefore rely on a unification of these jumblings for their wholeness, they require that the unifying source be active continually during this nearly constant process. Making conceptual ones out of the chaotic many, and then organizing the ones into a rational manifold we identify as ours, seems to be the general character of thought.

Reason thinks ideas, which incorporate intuitions and concepts. Reason is thus a higher faculty than sensible intuition or understanding. But it is essential to

see the dependence of reason on these subordinate faculties. It does not depend on them for its existence, but it needs the concepts they produce to carry out its function, so as to be useful to the subject. Intuition and understanding, considered with regard to this use, are in reason, and their functions are part of reason's own usefulness. All three faculties rely on unity.

> Pure reason is in fact occupied with nothing but itself. It can have no other vocation. For what is given to it does not consist in objects that have to be brought to the unity of the empirical concepts, but in those modes of knowledge supplied by the understanding that require to be brought to the unity of the concept of reason--that is, to unity of connection according to a principle. The unity does not serve objectively as a principle that extends the application of reason to objects, but subjectively as a maxim that extends its application to all possible empirical knowledge of objects.[3]

This subjective maxim of systematic unity is an idea that belongs to the thinking subject. It is an idea that can apply only to knowledge. Without a unifying faculty of understanding, we would never coalesce the manifold of the sensible impressions that constitute Kant's "beginning" of all knowledge. The thinking subject first intuits, then thinks concepts through understanding, and then orders his thought through the unifying function of reason. We must look to the subject for the unity upon which the elements of this process depend.

This assertion presupposes an important question: how does the unity, which I assert to be central to the nature and activity of thought, relate to my concept of unity? This echoes Kant's criterion for determining a given concept to be synthetic. "The question is not what we ought to join in thought to a given concept, but what we actually think in it, even if only obscurely."[4] If what we actually think in a concept is a manifold, and can thus be separated or analyzed, the "what we think" has a two-sided existence. On the one hand it is many, on the other it is one. As a concept, it is synthetic if we are aware that the two sides are required to be put together. The many impressions have somehow been previously conjoined into a manifold. If I ask myself what I actually think in my concept of unity, that is, what kind of synthesis resulted in my concept, I become confused. The question loses meaning because I fail to find a coherent concept of unity in my thought. Examples of unity pour forth, empirical and partitive. I am unable to gather them. Soon I see myself thinking, over against the lot of united things thought. This serves to point out my oneness in a comparative way. My failure to find unity as a concept, does not prevent me from thinking of myself as one, more truly one than any other example I have. Is my own unity also my concept of unity?

To answer this question, I must analyze my thought without the benefit of Kant's system. I can't think about my thought through his system without first determining my own relation to it. According to Kant, I can have no empirical experience of unity. I can have experience only of concepts arising from sensibility, which are possible in part because of the category of unity. The category is at work each time I am conscious of a given representation.

But what do I think about unity, what notion do I have of it that allows me to hope to apply Kant's ideas in my thought? It is appropriate here to be somewhat naive, and briefly to follow my sense of being pushed back from the empirical experience of the cohesive aggregations we loosely term "unities", to the reasons why we do so.

In the second paragraph of the Introduction to the Critique of Pure Reason, Kant distinguishes empirical knowledge from "what our own faculty of knowledge supplies

from itself."[5] His cautions against the error of deducing necessity from examples of experience are frequent and numerous. This suggests that Kant wants to remind not only the reader, but himself as well, that care must be taken to limit consideration of the role of necessity to the realm of pure thought. As creatures in the world, we don't often need to question the truth of appearances. We treat objects as things entirely knowable in themselves, even as we contemplate the inherent error of so doing. If we look at the process of our giving up on the hope that experience can illuminate the character of unity, perhaps we can reveal something about the way we come to see unity as crucial to thought in general.

Strictly speaking, we don't see unity in experience, but rather unification, or the results of processes of unification. In the first case we see the actual "bringing together" of diverse empirical elements into a "whole". In the second case we see the "whole", and its composition is apparent to us by analysis. In the world of objects treated as things knowable in themselves, unification is the process whereby individuals are grouped. This results either in an aggregation in which the individuals are judged as sharing an identical quality, or in a system where the individuals are seen as complementary elements of a unique singularity. The description of the simple aggregation can serve as a general description of any of its members. Similarly, the end toward which the system-group is aimed is greater than any of the diverse purposes of the complementary parts. In both instances, the parts are more effectively comprehended. Our thinking, which was scattered because it had to address many thing, gains cohesion and power by our gathering them into encompassing wholes.

Next we may notice in gathering individuals into unified groups we do not negate their individuality. The unified groups strive to imitate the cohesion of the individuals they contain, which are always simpler than the groups. This pushes our thought into the regressive exploration of increasingly simpler wholes. Our empirical examples fail to show us unity, because the successively simpler wholes contain parts that can in turn be analyzed. We are forced to explore unity in thought.

A purposely naive retracing of the path that we take in moving from the awareness of empirical unification and the power it seeks to secure, back into the necessary principle of unity in thought, mirrors what must have been the philosophical preparation for the writing of the Critique. "There can be no doubt that all our knowledge begins with experience."[6] This first sentence of the introduction to the Critique reveals Kant's awareness that he must subsume empiricism in stepping away from it. There can be no doubt that man's first knowledge comes from an unexamined process of acquisition. Kant knew that he normally treated objects the way we all do. His initial examination of experiential knowledge must have involved basic questions, and threatened (at least initially) his confidence in the "reality" of the world. Ultimately his philosophy does not ask us to change our physical relation to objects; but it does demand that we recognize "reality" as a subjective idea. The empiricists were confident that their observations were undeniably objectively real, and that unerring logic following from these observations taken as principles could not fail to be correct. Kant ushered in transcendental philosophy by simply asking how they observed, how they thought, and from that, how observation and thinking are possible.

I. B. Discussion of the presuppositions behind considering experience to be the beginning of knowledge.

The assertion that all our knowledge begins with experience only seems possible after an extended analysis of the faculty of understanding. It presumes a specific definition of knowledge as relying on concepts, which are themselves defined as the reproducible representations of manifolds in intuition. The statement also therefore

presumes that the understanding is the faculty which makes concepts. The beginning described above is a temporal one, where perhaps the connotation of origin is missed. It cannot be otherwise, since time is the form of all intuition, the root of knowledge, but the awareness of this temporal beginning presupposes analysis of understanding. It is the first sentence of the Critique. It has been placed there for a specific reason. We must transcend this temporal beginning, and examine the analysis from which it results.

Consideration of the presuppositions involved in Kant's assertion that experience must be the temporal beginning of knowledge, helps to reveal the logical convolution of the Critique's explication. Logical analysis reveals sensible intuition as the temporal beginning of possible knowledge. For this reason, the Critique begins its explication with an analysis of sensible intuition. Logic reveals intuition as the source of knowledge. Logic is a faculty which lends necessity to the movement of thought. Thus intuition is revealed as the necessary beginning of the process of acquiring knowledge. We may acquire knowledge that begins with intuition, without explicating this process to ourselves. Logic then simply works in us unanalyzed. We treat our intuitions as given and from them determine what logically follows. But when we wish to explicate the workings of the process, this is, to say what in us receives impressions, and what we do with them, etc., we are faced with the problem of explicating necessity. In effect, logic is then led to explicate itself, its function of lending necessity. A further complication is the fact that the language of the explication depends on logic for its capacity to "make sense". The logically derivative, complex rules of syntax must constitute the form of an explication of the most basic beginning of logic. What approach can we make to the explication of logic? The Critique is Kant's offering to us in our predicament, the result of his sharing our dilemma. It can only have followed in the wake of the incisive questions which carry it along. Our initial attempt to judge his rigor, his logic, his depth, consists of trying it on. That is, we try to think as he does. As a result of this effort we come to a point where we rely heavily on the prefacing remark, "Kant would say...", in answering philosophical questions put to us. We give Kant permission to answer for us. The temptation and indeed (if we want to know his thought) necessity of this "trying on" is analogous to the aforementioned unanalysed acquisition of knowledge. We read Kant and accept him, working to give the system its full due. We do not isolate clearly and methodically the concepts that we understand arising from the book, but we do generate them, as unquestioningly as we avoid cars in the street. As we grow comfortable with the Critique, we disentangle ourselves, achieve some distance, and try to figure out what we think about it.

We apply his method to his own system, once we can begin to "place" it, or glimpse its collective rational unity. The above description of our familiarization process, could perhaps be generalized into a description of familiarization in general. But the fundamental character of Kant's subject matter puts limits on the process of looking within his system. We want to go beyond an unquestioning acceptance, to a full explication of the necessity, carried to its original source. This "source" may well be seen as the true beginning" of knowledge. As it is the source of logical necessity, it is also a limit to the logical process of validating philosophical systems.

II. A. Dependence of each stage of the analysis of understanding on the unity it reveals as its highest principle.

This paper began by discussing reason as the unifier of our body of knowledge and of possible knowledge. We think of the expression "what we know" as intending only one thing, albeit comprehensive. Kant terms this aspect of reason "systematic unity", and he relates it directly to the unifying capacity of the faculty of understanding.

> Just as the understanding unifies the manifold in the object by means of concepts, so reason unifies the manifold of concepts by means of ideas, positing a certain collective unity as the goal of the activities of the understanding, which otherwise are concerned solely with distributed unity.[9]

This collective unity is the totality of possible knowledge, and it apparently reflects the unity of the understanding which facilitates the generation of concepts. The Critique of Pure Reason is distinguished from the system of pure reason since it does not claim to offer the "exhaustive application of such an organon."[8] Rather, it seeks to delimit completely the principles of a priori synthesis. Two results of a priori synthesis are possible: the form of possible manifold in intuition, or a body of a priori knowledge based on pure concepts of the understanding. The first synthesis is temporally prior in relating to acutal experience, but depends on the logically prior possibility of the second synthesis. Pure concepts of understanding must relate a priori to objects, but their existence, Kant says, already presupposes the combination attributable to a higher unity.[10]

> [Combination]... is an affair of the understanding alone, which itself is nothing but the faculty of combining a priori and of bringing the manifold of given representations under the [systematic] unity of apperception. The principle of apperception is the highest principle in the whole sphere of human knowledge.[11]

This lofty evaluation of the synthetic unity of apperception may seem surprising, since we associate it with concepts of understanding rather than with the disjunctively considered, "higher" sphere of pure reason. It is often difficult to retain the awareness of reason as the legislator of thought. This is because we are normally put upon by need and see legislative function only when we reflect on the "how" of thinking. Reason itself supplies the principles of understanding,[12] of which the highest is the unity of apperception. This high principle of knowledge alone can reflect the systematic unity of pure reason, whose ideal end is the totality of all possible knowledge. But this is a statement of its stature and is not illuminating as to the nature of the principle.

Our initial, more naive conception of the shared unity at the center of thought was based on the dependence of reason on understanding and intuition. We imagined the subordinate faculties as contained within the faculty of reason. In making such a formulation, we abstracted from the movement in the process of acquiring knowledge to a fixity of the interrelation of the elements of our mental activity. I suggest that Kant's description of the acquisition of knowledge arose from an analytic and methodical questioning of empiricism, which centered around a complaint that it lacked explicit logical necessity and didn't address the condition of its thought.

The original synthetic unity of apperception is the ultimate yield of Kant's rational analysis of the possibility of understanding. When we have it revealed, we have attained the abstract fixity in which all the fundamental elements of rational thinking are displayed before us. Their necessary order can only now be ascertained as truly necessary, since only by seeing its root in the principle of unity is categorical necessity even deemed possible. Once we have attained this high principle that lends necessity to the generation of concepts, we can look back at the process of its revealing, that is, the sections of the Critique prior to the Transcendental Deduction. We then see the dependence of each stage on the principle itself. In the first stage, the Transcendental Aesthetic, Kant is primarily concerned with estab-

lishing space and time as the sole formal conditions of sensible intuition. "It is...indubitably certain that space and time...are merely subjective conditions of all our intuitions."[13] Kant's analysis of the faculty of receptivity through which objects are given to us is the epitome of plausibility. He offers a complete argument for its acceptance, since our alternative of ascribing objective validity to space and time would be a relinquishing of our ability to say "indubitably certain", that is, to prove the necessity in the relation of space and time to our intuition. But the completeness of the argument is not assured until we have gone further. This "indubitable certainty" is not explicitly possible until the ground of the necessity is revealed as the unity of apperception. "Time and space are therefore two sources of knowledge, from which bodies of a priori synthetic knowledge can be derived."[14] Such bodies of a priori synthetic knowledge necessarily contain concepts derived from sources in intuition, and so establish these sources as indubitably certain and subjective. To question their necessity is equivalent to denying synthetic unity, and questions Kant's formulation of concept making.

In the short introduction to the Transcendental Logic, the understanding is designated as "spontaneity in the production of concepts,"[15] which it makes in conjunction with the other fundamental source of knowledge in the mind, the sensible intuition. Here, the two-fold role of logic that we have already described is made explicit. First, it must give necessity to the process of acquiring a priori knowledge; and second, it must reveal the source of this, its own necessity. This is the role of transcendental logic, which is distinguished from general logic in that it treats only of the a priori use of understanding.

Empirical objects, even should they never vary in our experience, cannot be shown to exist necessarily. Their consistence in experience refers us to the subjective necessity that underlies the possibly of their being judged as unvarying. General logic, which supplies the rules under which these objects must be brought in the understanding, can therefore only treat of the form of thought, irrespective of its sensible content. But since a priori synthetic knowledge is available to us,

> a distinction might likewise be drawn between pure and empirical thought of objects. In that case we should have a logic in which we do not abstract from the entire content of knowledge. This other logic, which should contain solely the rules of the pure thought of an object, would exclude only those modes of knowledge which have empirical content. It would also treat of the origin of the modes in which we know objects, in so far as that origin cannot be attributed to the objects.[16]

The origin of the modes of human knowledge is attributed to the thinking subject. Is this saying that knowledge derives from the knower? If appearances provide only the substance of knowledge, and in no way contribute to the actual modes of knowing, this would suggest that in the thinking subject alone are we to find the functional origin, or true beginning of thought.

II. B. Transcendental Analysis of understanding reveals synthetic unity as the purest concept.

The Transcendental Logic is divided into two sections, one of which, the Transcendental Dialectic, Kant claims to be "no more than a critical treatment of the pure understanding for the guarding of it against sophistical illusion."[17] The first part, the Transcendental Analytic, is the more substantial, recognizably logical section. The initial book contains first, the exposition of the table of categories, or

pure concepts of understanding; and then the Transcendental Deduction, where the unifying function of the categories is made explicitly possible and necessary. The first book of the Transcendental Analytic contains what seems to be the essence of the Critique of Pure Reason. The analytic is an attempt to understand understanding. Here is found the full force of the word "transcendental". Here is also felt the extreme limitation of words and language. If we think of the term "transcendental" as indicating movement out of a given mode into the understanding of its possibility, then what do we intend by the application of this "movement beyond" to the understanding itself?

The determination of the system of concepts of pure understanding is an analysis which Kant does not describe. The system seems to yield itself to him effortlessly, through the act of his looking at understanding with only the aid of his concept of purity, which prevents his looking, as it were, from admitting any empirical blemish. What is Kant analyzing? We might offer some of his own words--he's analyzing the faculty which generates concepts a priori--but are these words satisfying to the purity of what they intend? Kant's own description is equally troubling.

> By analytic concepts, I do not understand their analysis, or the procedure usual in philosophical investigations, that of dissecting the content of such concepts as may present themselves, and so of rendering them more distinct; but the hitherto rarely attempted dissection of the faculty of understanding, itself, by looking for them in the understanding alone, as their birthplace, and by analyzing the pure use of the faculty.[18]

The analysis is explicitly a mere "looking" and yet it serves to "dissect" the understanding. What is intended by the two metaphors? "Looking" is that evaluation of the thinking self, in which we determine what concepts are available. They need to be "sought", to find "place"--I can't seem to avoid spatial analogies or offer a description of what is intended by this process of "searching out" the contents of a thinking faculty. It is a mental "searching" to which we have such a simple relation that our need to employ analogical descriptions of it cannot tarnish the clarity of our thought. "Dissecting" is even more complex as it presupposes the more specific condition of the prior cohesion of the elements of understanding. It is the dissection of a faculty we must already "have" in its entirety.

This calls up the distinction initiated in the Introduction between analytic and synthetic judgments.[19] There Kant claims that the effect of this distinction on philosophy has not been keenly felt before his own treatment of it. This is an important indication of the role that his analysis of thought occupies in his own mind.

Analytic judgments, he says, can be thought of as explicative; while synthetic judgments should be termed ampliative. These words point to a question which becomes vital when thinking of the unity of apperception, namely, is one of the two kinds of judgments more necessary? The possibility of an analytic judgment depends on the existence of a concept that is unified, or has already been synthesized. All analysis then, is grounded by a priori synthesis. And while the determination of a concept as synthetic depends on the capacity to analyze it, it might be imagined that synthetic concepts could exist alone without any analysis possible. They would simply foster other synthetic concepts in one direction, that of a progressively more encompassing and complex concept. All learning would then be the building of a super-concept that contained all of an individual's knowledge. Analytic judgments, adding nothing to concepts, do not sit in the position of grounding synthetic ones. Thus the entire Transcendental Analytic presupposes a synthesized subject matter already existent. Since the actual steps in Kant's "analyzing the pure use of the faculty" of understanding, are not described, we are forced to trust that a synthesized

understanding that must be presupposed is known to us so simply and fundamentally that it is indescribable and susceptible of an equally indescribable analysis.

Upon presenting his table of categories, Kant says,

> This then is the list of all original pure concepts of synthesis that the understanding contains within itself a priori...by them alone can it understand anything in the manifold of intuition, that is, think an object of intuition.[20]

The table is the result of the undescribed analysis. The next statement is an assertion of their fundamentality to thought. At this stage of the argument, Kant relies on the rigor of his preparation to make up for the "space" in between the categories and their function. The above statement is an encapsulation of the move from the analytic determination of what the categories are, to the analytic deduction of their indispensability, in which he set out to prove their uniqueness and exhaustiveness. "Concepts of synthesis" are principles of the combination of the manifold in intuition. The possibility of combination is rooted in the original synthetic unity of apperception. In the same way that we presume as necessary a pure synthesized understanding whose analysis reveals the categories, so the synthetic unity is described by Kant as an analytic proposition. We must be able to deduce a priori the form in which an object may be represented to us. Only by this will we be able to extend necessity to the object, as known. Deduction is a logical process, and it is analytic. It has the character we looked at earlier, of "pushing" us back to necessary conditions. Since, in this case, all its movement is born of a priori necessity, Kant terms it a transcendental deduction. The necessity that <u>this</u> deduction pushes us back to is so pure as to validate the categories themselves. It is the source of their power to give cohesion to the chaos of pre-appearance. It is the purity in pure thought. The word "necessity" seems insufficient to its actual intended function.

III. A. The thinking subject considered as object leads to our inability to reject individuality.

The application of the analytic/synthetic distinction discussed in section four of the Introduction to the consideration of the synthetic unity of apperception, serves to exhibit the depth of my conceptual dilemma with unity. Kant identifies the principle of the unity of apperception as "an identical, and therefore analytic proposition."[21] He explains,

> For it says no more than that all <u>my</u> representations in any given intuition must be subject to the condition under which alone I can ascribe them to the identical self as synthetically combined in one apperception through the general expression, "I think".[22]

It seems that the unity is an analytic proposition because it serves only to explicate the thinking subject, not to join anything to the concept that we have of it. Looking at the language of the argument, I question whether there is any "room" for analysis in the simple realm where the unity exists; or whether anything is more analytically appropriate than that my representations must be called mine. By analysis, I identify my capacity to say "I think" as signaling a unity in my representations which must be the result or prior synthesis. Explication is often essential to understanding. Analysis, in the empirical world, would seem capable of providing more information to the mind than synthesis. Here, however, isn't analysis in an

impossible bind? We feel the push of analysis, but we can't offer an illumination of the nature of the synthetic unity that is presupposed. We can only deduce that it must exist, and this deduction is the result of an analysis that began by looking at sensible intuition. I suggest that this whole preliminary analysis stands in need of the ultimate unity that it reveals as the limit and source of its own power. Here we feel both the push of analysis <u>and</u> the ultimate synthetic coherence of unity co-existing and giving rise to thought itself.

In support of his attributing an analytic nature to the principle of synthetic unity, Kant makes the following statement:

> I am conscious of the self as identical in respect of the manifold of representations that are given to me in an intuition, because I call them one and all my representation, and so apprehend them as constituting one intuition.[23]

The analysis of any concept will result in a sequence of analytic judgments in which "I" am the judge, and I identify the elements of the judgment (subject and predicate) as <u>my</u> representations. In order that this be possible, we must conceive of the necessity that a synthesized, potentially divisible concept already be available, arising from the original unity. The formation of the above sentence is revealing. I <u>am</u> something because I <u>do</u> something. "I" both is and does, and its doing is a proof of its being. Upon what does this proof rely if we accept that we can have no knowledge of the "I" as it is in itself, but only as it appears?

The synthetic unity of apperception is not the "I". We want to attribute it to the "I" as a way to get "nearer" to what the "I" in itself may be. In the unity, we see a coexistence of analysis and synthesis nearing the absolute cohesion we suspect must exist in the "I" that is capable of sensing, understanding, and reasoning. We have said that analytic thinking is pushy in general. It seems that a concept isn't fully known, isn't knowledge per se, unless it is fully analyzed. So the understanding pushes for completeness in concepts. Similarly Pure Reason is a kind of transcendentally analytic, or potentially analytic faculty, that applies itself once a body of potentially related complete concepts <u>are</u> known. What is reason's analysis pushing toward? A complete system is what Kant suggests is reason's focus. What do we mean by a complete system? His assertions about the responsibility of philosophy and the exhaustiveness of the categories, all suggest that he intends to fully delimit the parameters of possible truth. He wants to be infallible, so that all questions of the form of thought, that is, the a priori condition of the mind, may be answered. The only proof Kant will accept of the connection between an object and its synthesized representation in the understanding, is one that establishes an a priori readiness to know the representation as an object. These words--know, representation, and object--have the very narrowly defined meanings offered by Kant in order to limit confusion. He rejects an empirical proof of the connection between object and representation (i.e. that the object makes the representation possible), because it cannot be shown to rest on a stronger condition than the commonality of experience. The object itself is out of range of possible knowledge. It is truly independent of our thought. Commonality of experience could only yield what Kant considers a de facto deduction of the form of its representation in thought.

This brings us back to transcendental deduction, and its relation to the noumenal synthetic unity whose activity brings the categories into existence.[24] Deduction is a logical process and cannot contain the unconditioned in any way. But this is the deduction without which no other deduction is possible. It is at the beginning, and logic cannot simply start itself up like a motor. If we wish to make it logical, it seems we must find a way to condition the original unity. We are

pushed and reason won't yield, even here where its own effectiveness finds its root, its limit.

Kant certainly does not proclaim the unity of apperception to be unconditioned, nor does he claim to condition it so as to preserve the strict logic of the deduction. Indeed, as logically necessary, unity must be conditioned. His description of its necessity only succeeds insofar as his language succeeds. And while his language and logic are impeccable in regard to establishing the "I" (or at least the synthetic unity attributable to it) as a kind of ground for thought, he makes statements which out of context sound like tautologies. "For the manifold representations, which are given in an intuition, would not be one and all my representation, if they did not all belong to one self-consciousness."[25]

Perhaps it is reason's unceasing drive toward comprehension that "conditions" the unity of apperception. For there is an idea of "complete systematic unity belonging to reason. Kant assigns three ideal objects to this idea, the first of which is the "I" considered as "thinking nature or soul."[27] Since we are beyond "I think", where the thinking self is an object, we are also outside of understanding. Pure reason is looking at an object that it gives for itself.

> Instead, then, of the empirical concept (of that which the soul actually is), which cannot carry us far, reason takes the concept of the empirical unity of all thought; and by thinking this unity as unconditioned and original, it forms from it a concept of reason...The idea of a simple self subsisting intelligence..It is endeavoring to represent all determinations as existing in a single subject, all powers, so far as possible, as derived from a single fundamental power, all change as belonging to the state of one and the same permanent being, and all appearances in space as completely different from the action of thought.[28]

If we consider this in conjunction with our understanding that the synthetic unity of apperception constitutes the objective validity of the object,[29] and so determines itself as utterly subjective, we see here, at the root of the thinking process, something like an inability to reject our own individuality.

When I say, "my mind makes me...", I mean that I feel a necessity in my thought that "pushes" for completeness. I believe this is what Kant describes as the effect of the transcendental ideas on my understanding. I wish to order my knowledge and to have concepts in their fullness of meaning. Reason is always seeking to complete the system of knowledge that is born in the understanding, thereby giving concepts place and "extension". Transcendental ideas are not bound the way concepts are to objects, as they have no object in concreto.

By identifying "I think" as a kind of ultimate object, we have introduced a ranking of a priori concepts--a transcendental hierarchy of importance that reflects the truth of the concepts contained in it. "I think", as we know, accompanies all representations. We may therefore consider our knowledge of any concept to be expressible in a judgment. This can be seen most clearly in the common response to the question, "what do you think?" We say, "what I think is...", in which objective truth, that is, subordinate judgments concerning objects, is united in the predicate of a self-directed judgment of myself as thinking. This is only redundant, since all representations are susceptible of such a construction, but it is also a very common use of language. This suggests something we have already alluded to--the "ultra a priori" nature of original unity. One might think that the universal applicability of "I think" would eliminate it as an effective linguistic tool. But we seem to need to say it, to reaffirm a connection between the object we make of our self, the activity of thought, and the empirical object of the cosmos.

III. B. Thought directed toward the self is recognized as conditioning being.

All our concepts must come in a categorical form. The table of categories, as Kant says,

> contains all the elementary concepts of the understanding in their completeness, nay, even the form of a system of them in human understanding, and accordingly indicates all the momenta of a projected speculative science, and even their order, as I have elsewhere shown.[30]

Any concept may be placed in a category which subsumes it a priori, and we can see a necessary relation between empirical concepts only because of the necessity of the relation of the categories that subsume them. The necessity of the categories is not, however, the source of necessity itself. The deduction of their necessity is different from the necessity that "I think" accompany all representations which, as we said, involves our inability to reject the individuality of our thought, or to separate our being from the condition of this activity of thought. Our consciousness of this inability is what leads us to deduce the original unity of apperception as underlying the analytic unity of all consciousness of objects. The logical necessity of the existence of this unity is categorical, implying a tautological circularity--that the categories could somehow provide proof of their own necessity. Logical necessity is the result of our holding up individuality of thought as undeniable, our challenging ourselves to "get behind" it in thought, and our inevitable failure to do so. Can we ever get behind logical necessity?

This is to ask whether we can get behind original unity. Perhaps we cannot do so directly, as we have shown that the language we would use relies on the principle of unity in a truly transcendental way. Its reliance prevents us from actually explicating the truth of the original unity's being, or the truth of its transcendental necessity. What can we do with language that might cast light on this hidden place in us?

I have spoken of the "I think" as an ultimate object. I have intended by this to show that the reliance of human thought on "object" limits and bounds our language and conditions the true independence of the unity which constitutes individuality itself. Thus far I have not dealt with the fact that my ultimate object "I think" is also a verbal construction. Because it is language, our expression is analyzable into the linguistic elements it contains. But the truth of the object is that, in the "thinking being" we intend, the so-called activity of the being is not deemed analytically separable from the being itself. That is, the thinking seems to "constitute " the being, or is unified to it so closely that language is unable to describe the joining. Still, language calls this "I think", which, as containing elements, suggests that, though the unity of the thinking being may not be described, it is not the ultimate source of unity. Considering the predication of being in the "I am", we find it illusory and self-indicting in its self-consciousness. The predication does not trace back to an inner sensible intuition. Does it make sense to just say "I" and look?

My status as a thinker is changed by questions concerning the "I". As the ground of thought, it seems no conclusions may be reached about it analytically. There can be no concept of it. Alone in its presence, I am thinking, but my thinking is a mere looking, the simplest mental affirmation that I am real, and I am thinking. Kant justifies the principle upon which his Transcendental Deduction, and I claim his entire philosophy, is based, by presenting us with a challenge. It is a challenge he must have presented to himself as an "I". The challenge is simply to reject the

consciousness of the absolutely unified self, to say that it is not one, or that we are unsure where we acquire whatever internal cohesion our thought has. If being is separated from thinking, perhaps we are introducing a demonstration of the independence each has from the other. In any case, the justification for the principle which lends necessity to all thought, both a priori and empirical, is not strictly a logical appeal. We cannot ultimately reject our own individuality. Kant tells us what must fall out from this, if we accept it as true, but we cannot offer logical proof. May the justification ultimately be our own feeling of oneness, and might this not still be a rational justification? The analytic nature of the principle of original unity has come into question.

What we know of the original unity is not "what it is", but only that it is necessary for us as sayers of the expression "I think". This is because we must understand by thinking, because there is no understanding available to us intuitively. Intuitional understanding may be possible, but Kant says that we can't imagine what it would be like. The "I" that thinks is phenomenal, and its concept may be traced empirically to inner sense, the representation of myself as I appear to myself, i.e. as thinking. Of the two verbal expressions in which we place the "I", the expression of being, I am, offers no synthesizable manifold. The active expression, I do (in this case I think) implies an object of the action, something done or thought. The object cannot come from anywhere else than a given united manifold of intuition, whose unity is derived from the unity of apperception. I may attach "I think" to any of my representations. Thus each of them presumes a self directed judgment of myself as thinking, and not merely thinking, but thinking something.

This would seem to indicate that I cannot be aware of the unity of apperception except as necessary to my perception of a unified object. The unity's effect is extended from the origin to the potential object in the joining of the elements in a judgment. Through the judgment (a relation itself), the being of the subject, conditioned by the predicate, is seen in relation to or is "brought to", the original unity. The simple relation of the judgment, when seen as a uniting of its disparate elements, can receive this unifying force only from its original source. If I am not specifically conscious of my judging, I am nonetheless conscious of "what I think".

When I unite disjointed representations into an objective concept, I do not make the object into a part of my unity. My extending of unity is not something I may choose or not choose to do. It makes my thought, and thereby all consciousness of myself, possible. I force the manifold into a state that reflects my unity of thought; I make it a whole by relating it to my unity. In the third class of categories, those dealing with relation, such a whole corresponds to community. The logical function associated with community is the disjunctive judgment.

> We must observe that in all disjunctive judgments the sphere (That is, the multiplicity which is contained in any one judgment) is represented as a whole divided into parts (the subordinate concepts), and that since no one of them can be contained under any other, and so as determining each other, not in one direction only, as in a series, but reciprocally, as in an aggregate - if one member of the division is posited, all the rest are excluded, and conversely.[31]

Concepts are coordinated with one another, and thereby unified into a judgment. The concept of this coordinate relation is the most illuminating description I can find of the actual process of extending unity and making "wholes" in thought. It seems like transcendental organization. The coordination is most like the activity of unity. The categorical necessity of the coordination reflects the pure internal cohesion that must constitute the truth of unity.

We may say "I think", or we may offer a conditioned verb of being, "I am a thinking thing". If we say only "I am", we are still conscious of our saying, and so of our thinking. We cannot think of our being without thereby conditioning it. Our thought recognizes the condition it sets on our being. It recognizes its own function as the impediment to itself--it seems ultimately to preclude examination of itself. Even stranger, thought isn't stopped in its tracks by this realization, it retains all its normal power intact. It still is able to prove propositions and provide the full framework for human truth. It can categorize itself, but not know itself. The origin of all its limited ability, is its ultimate inability.

I say this because of unity. Oneness and wholeness are words that I associate with empirical observations, for they are primarily attributable to things. I associate unity, on the other hand, with origin, and I consider these to have specifically transcendental implications. The synthetic unity of apperception is the yield of a self-directed analysis. It is attributable to the I. Somehow, looking at its place, and its surmised function, puts me near the unspeakable truth of my existence. The power that binds analysis with synthesis into coexistence within the unity of apperception must be even greater in the unknown self. Because the challenge of rejecting this origin stands (that is, because we do not know what it would mean if it didn't stand), we are sure of the unity of the self, despite its being unknown.

The self is the ground we stand on when we look at object, whether empirical or a priori. What can ground us if we wish to look at the self, to extend out the sphere of knowledge to meet it? What if man were able to cultivate an ability to feel the unity of empirical wholes as simple, despite possible complex division into parts? Maybe if we listened more closely to ourselves, we would realize the depth of our own unity. Each time we possess or claim, or otherwise subjectify ourselves, maybe we "touch base" with the center of our minds. We do this to a degree in certain recognitions and responses of a less philosophic character, more instinctively. For example, need is an awareness of necessity in the self, and so the need, as mine, has a self-focusing quality. The self-awareness that results from this kind of necessity is one in which the self is alone with its need. Such a need can become so acute that it drives everything out of the mind except self-awareness. In considering unity as the fundamental center of thought we put ourselves in a similar position of being alone. It is from this cohesive center that we open out to the world.

FOOTNOTES

All notes refer to the following:

Kant, Critique of Pure Reason. St. Martin's Press, New York 1929.
Trans. Norman Kemp Smith.

[1]
[2] p. 93
[3] p. 102
[4] p. 552
[5] p. 54
[6] p. 42
[7] p. 41
[8] p. 533
[9] p. 58
[10] p. 58
[11] p. 152
[12] p. 154
[13] p. 58
[14] p. 86
[15] p. 80
[16] p. 92
[17] p. 95
[18] p. 101
[19] p. 103
[20] p. Section IV, Intro.
[21] p. 113-4
[22] p. 155
[23] p. 157
[24] p. 155
[25] p. 501
[26] p. 153
[27] p. 556
[28] p. 557
[29] p. 557
[30] p. 156
[31] p. 114
p. 117

For Li Ch'ing Chao

Judy Kistler

Last night the upper heavens
were the color of eggplant,
but the last breath of the sun
shone golden through the trees.
I often watch in silence,
then turn aside to read the Chinese poets.
Unlike them, I have no phoenix hair ornaments
to crush in my uneasiness over
your absence.
Unable to decide, we dance about each other;
repelled and attracted,
magnets unsure of our polarities,
moths flirting with the flame.

Judy Kistler graduated from Santa Fe in 1977 and teaches math and Chinese at the Forman School in Litchfield, Connecticut.

Surf and Misfortune A Study of Oedipean Tragedy

Jeff Kojac

In the final choral ode of Sophocles' Oedipus Tyrannos, the tragedy and the moral of the play are portrayed in the words, εἰς ὅσον κλύδωνα δεινῆς συμφορᾶς ἐληλῦθεν (He was taken into the great fearful surf of misfortune).1 The conclusion to the play begins with a parallel to Oedipus' opening speech. The chorus addresses those who live in Thebes and reminds the hearer that Thebes is a city cursed with bloodshed since it was founded. It describes Oedipus as a masterful riddle solver envied by all. Yet this Oedipus, the chorus sings, was swallowed by the sea of misfortune and found that no mortal could be counted happy until dead, for the future can hold great misery no matter what may be the blessings of the present.

Such a closing statement to the play leaves the reader with a moral very close to that Solon shares with Croesus--that the rich and powerful king is by no means the happiest, for his downfall can come before his death. The key to this moral in Oedipus Tyrannos is the fearful surf of misfortune actually swallowing Oedipus; this is the tragedy of the play. The nature of the swallowing is Oedipus' inability to perceive himself due to his fear and anger.

Oedipus clearly is in the sea of συμφορᾶς right from his birth, long before he drowns himself. He flees from Corinth in fear, kills Lauis' party in anger, and brings about his own downfall in the dialogue of the play. He becomes angry at Teiresias and forces the seer to speak words which only make Oedipus more angry and bring him into conflict with Creon. Oedipus' anger against Creon draws Jocasta into the play, and through her Oedipus' guilt is exposed. When the messenger from Corinth presents the news that Polybus is dead, Oedipus openly expresses his fear of the bed of his mother in Corinth. This fear dissolves when the messenger explains that Merope was only his step-mother. This in turn brings a herdsman to the palace. Oedipus again becomes angry, and it is because of this anger that he finds the truth and realizes the oracle has been proved true. His rage takes him to Jocasta's chambers and, finding her dead, he vents his wrath on himself: he blinds his own eyes and thus completes his descent into the waves of misfortune.

Oedipus sinks in misfortune's waves through his thrashing about in anger and fear. Both of these emotions blind him from true self-knowledge and make it all the more painful when the truth is finally impressed upon his eyes. The drowning in misfortune is an understanding of the self. Oedipus learns of his true self, just as Croesus eventually sees his fragility and mortality when he is about to be burned at the stake by Cyrus. Oedipus does not only learn of his true self in the sense of his heritage and the consequences of his actions. He catches sight of himself as a man who is proven able to err and suffer regardless of previous rank, blessings, or abilities.

Yet Oedipus is not happy in his newly gained self-knowledge, and to use his own phrase (line 1444), he is "ἀνδρὸς ἄθλιου" -- a man of misery. The horror of his wretchedness is not purely a product of the discovery of his incest and patricide, for as Jocasta hints at, unknowing incest doesn't necessarily deserve such horror (line 982), and Oedipus' father surely attempted to kill him twice--Oedipus' killing was self-preservation. The underlying reason for Oedipus' wretchedness must lie elsewhere.

Oedipus' tragedy comes about through his fear and anger, and it is these two facets of his character that blind him. Oedipus cannot see because he is too frightened to see. He does not believe in himself as an individual, for clearly he is affected by the words and actions of others to such an extent that he loses himself in rage. Such rage expresses his inability to accept his own self; his anger comes as a reaction to those that challenge his authority in any way. This anger shows that he does not feel himself truly to be the great man that he is considered, for if he were the 'great man' he could not successfully be threatened. Thus Oedipus' insecurity is his blindness.

The word translated as misfortune is συμφορᾶς, but this word can be rendered as luck, either good or bad, and as a chance event. This explains why συμφορᾶς is described as the surf; the waves can be positive, negative, and neutral in their apathetic treatment of a surfer. The waves do not set out to drown the surfer or provide him with a good ride or bore him with small breakers; rather the waves are a natural function of the planet without any intentions or cause to them (other than a merely efficient cause).

The surf of συμφορᾶς is pictured as great and fearful because it is man who is responsible for the outcome of the waves; his actions decide whether the luck is good or bad. Oedipus is taken into the horrible world of chance: this is a totally different understanding of the play from the usual speculation that Oedipus is fated and trapped into his tragedy. But it is a solid interpretation: he can react in any way he chooses to the oracle, his father, the plague, Teiresias, Jocasta, the messenger, and the herdsman. And he does so in a consistent manner: with anger and fear. Swept into the world of chance, Oedipus acts in a destructive and insecure fashion. He thrashes around in the surf of συμφορᾶς with his actions because his self-perception produces the consequences of the great fearful surf. The play's tragedy therefore lies in Oedipus' being given the chance to make his own consequences. The reason why such 'chance' is tragic is that his true self is relied upon. It is his true self that fails him; it responds with decisions that topple him from his throne. Oedipus' horror comes from perceiving that his true self is prone to the same mistakes and follies as that of any other man.

Sophocles' lesson in Oedipus Tyrannos is not simply for haughty kings trapped in fate. Sophocles writes in such a way that his play is applicable for all men who can strive to see themselves truly and avoid both arrogance and self-deprecation. Through a portrait of Oedipus' being taken into the great fearful surf of misfortune, Sophocles gives the reader an exhortation to stay away from the extremes of conceit and self-hatred and instead to seek after a balance similar to Aristotle's 'mean' in The Ethics and Plato's 'sophrosyne' in Charmides.

[1] Oedipus Tyrannos line 1527, my translation.

A Translation of Jean De La Fontaine's "The Cat, the Weasel, and the Little Rabbit"

James O'Gara

A rabbit's palatial home fell, one fine morning,
As spoils to Dame Belette, who, without warning,
Seize'd on it; her cunning wit was weaselly--
The master was absent, the thing was done easily.
She brought and installed her hearth-gods one day
While he had gone to Aurora, his homage to pay
Amid the thyme and the rose.
Having grazed, trotted, made his rounds,
Johnny Rabbit returned to his abode, underground.
The intruder weasel pressed to the window her snout.
"O hospitable gods! What hath caus'd such a rout?"
Cried the animal evicted from his ancestral house.
"O Madame Belette,
Kindly dislodge, else further me upset!
Provoke me not the local rats to rouse!"
"But," said the lady of the pointed nose,
"To the first occupant needs must go the land.
Methinks this subject unworthy of threat'ning pose--
This lowly pit where I have crawled. And, I demand,
Were this a kingdom
Pray tell, what law were it to cede
Eternal right," asked she, "unending deed
To John, son or nephew of Peter or William,
Rather than to Paul--or better still, to me?"
John the rabbit invoked custom and ancient code.
"It is these laws that have granted me the run
Of this my hutch, and that have, from father down to son,
From Peter, thence to Simon, then to me, John, fairly won.
This 'squatter's right,' 'tis most unjust and incommode."
"Ah well, sir, let us no more scorn and scold
But take our case," said she, "to Haughty-snout."
'Twas a cat who lived as a devout hermit,
Practiced in all the arts of the hypocrite,
A saintly sort, deck'd out, all big and fat,
Pois'd referee, dispenser of much tit-for-tat.
Johnny Rabbit agrees the cat should judge the case,

LE CHAT, LA BELETTE ET LE PETIT LAPIN

Du palais d'un jeune Lapin
Dame Belette, un beau matin,
S'empara : c'est une rusée.
Le Maître étant absent, ce lui fut chose aisée.
Elle porta chez lui ses pénates, un jour
Qu'il était allé faire à l'Aurore sa cour
Parmi le thym et la rosée.
Après qu'il eut brouté, trotté, fait tous ses tours,
Janot Lapin retourne aux souterrains séjours.
La Belette avait mis le nez à la fenêtre.
"O Dieux hospitaliers! que vois-je ici paraître?
Dit l'animal chassé du paternel logis.
Holà! Madame la Beletee,
Que l'on déloge sans trompette,
Ou je vais avertir tous les Rats du pays."
La dame au nez pointu répondit que la terre
Était au premier occupant.
"C'était un beau sujet de guerre
Qu'un logis où lui-même il n'entrait qu'en rampant.
Et quand ce serait un royaume,
Je voudrais bien savoir, dit-elle, quelle loi
En a pour toujours fait l'octroi
A Jean, fils ou neveu de Pierre ou de Guillaume,
Plutôt qu'à Paul, plutôt qu'à moi!"
Jean Lapin allégua la coutume et l'usage:
"Ce sont, dit-il, leurs lois qui m'ont de ce logis
Rendu maître et seigneur, et qui, de père en fils,
L'ont de Pierre à Simon, puis à moi, Jean, transmis.
Le premier occupant, est-ce une loi plus sage?
-Or bien, sans crier davantage,
Rapportons-nous, dit-elle, à Raminagrobis."
C'était un Chat, vivant comme un dévot ermite,
Un Chat faisant la chattemite,
Un saint homme de Chat, bien fourré, gros et gras,
Arbitre expert sur tous les cas.
Jean Lapin pour juge l'agrée.

See the pair of them arrayed in face
Of fur-lined majesty, stuffed with pomp, but claws as mace.
Scratch-paw bids them come: "Advance a pace,
For I am deaf, infirmity of age the cause."
The two approach, gullible both, right to the traitor's jaws.
As soon as he has seen the plaintiffs near,
Scratch-paw, the good Judas, of canting mind,
Engulfs them both in a flurry of claws; and a wave of fear
Reconciling the plaintiffs, devours the pair combined.

All of which quite resembles the squabbling things
Which petty lords argue forth before their kings.

Les voilà tous deux arrivés
Devant sa majesté fourrée.
Grippeminaud leur dit: "Mes enfants, approchez,
Approchez, je suis sourd, les ans en sont la cause."
L'un et l'autre approcha, ne craignant nulle chose.
Aussitôt qu'à portée, il vit les contestants,
Grippenminaud, le bon apôtre,
Jetant des deux côtés la griffe en même temps,
Mit les plaideurs d'accord en croquant l'un et l'autre.

Ceci ressemble fort aux débats qu'ont parfois
Les petits souverains se rapportant aux rois.

Streetlight

Walter Plourde

The streetlamp shines outside the window. The light falls on me all the time when the room is dark, even though a Japanese blind is rolled down, obscuring the light. The glow from the street falls across my knees pulled up tight to my chest; it spreads across her sleeping face, across the cluttered floor, only to be lost in the corners of the room not ten feet from where I sit.

I don't know how we survived, she and I, three months in this tiny room. For three months this has been almost my entire world, our self-contained cave, and I'm not sure what spring bubbled up to keep us alive, feed us. Love, I tell myself. I told her the same thing a couple of days ago. I was sitting as I am now, my knees pulled up, arms wrapping my shins, hard wall cramping my back. She was sitting right next to me--the wall never seemed to hurt her back. She turned her head to look at me, her right eyebrow arched high above her pale, blue eye. A scolding glare twisted otherwise smooth features. She covered my face with her hand and slammed my head against the wall.

"You sap," she said.

She laughed. I laughed, and I chuckle softly now as soft images of love float around my head. Sweet-lipped cherubim dance in dew-kissed grass, and curly-haired cupids gently pierce swooning lovers. But I don't see our love; it's more like a hulking lunk, too dumb to die.

The blind rustles against the window. A draft lifts the blind and lets it drop against the window. The air is chilled around me. Cold air enters the room. Warm air leaves, and I am drawn with it. I am drawn to my other room, really my room, because I pay the rent there. And I draw myself out to repeat a stroll taken on a harsh winter morning months ago.

An early morning, and I left behind my cold, spare room with its drafty windows. Better to walk the streets in the cold than let the cold creep upon me through the windows. My feet made the only sound on the sidewalk, empty except for a light dusting of snow. The grey, still clouds pulled the world in upon itself, a place for solitude that day. And then her figure from around the corner. She pulled her grey cloak around herself and swooshed by me. She spun me on my heel.

"Hey, honey," I said, "What's your hurry?"

Empty, vapid speech tossed out on the wind, swirling down the street. I recognized her from a time before. She turned. Her cloak fell open.

"Oh, hi," she said.

Better for her if she had passed on by, never noticed me; better still if I had stayed in my room and let my teeth chatter together.

It's too late. A cold blast from the window brings me back, but it's too late. I am being pulled apart, my pieces spread through everything in this room. I pull back the blind. The direct light hurts my eyes. It feels real, but even the light is taking its piece of me. I let the shade fall back in place, and I look out across myself into the dark room.

A goat hair rug covers the floor to the door. The rug is soft and littered with debris. Clothes, books, and papers are scattered in no particular order. Every day

she says that it's a mess or it's a pig sty. Every day she cleans it, but every night it's messy again.

"It messes itself," I tell her.

She shakes her head sadly and squeezes my cheeks together with her fingers: "No," she says, "You're a slob."

The stereo amplifier is still on; I reach across her and turn it off. The lamp for the whole room is on the amp. It's a small lamp with a white shade always covered with unused bandanas. Every time I want to read I beg her to remove them.

"I can see fine," she says.

"But I'm going blind," I tell her, "Now, what could be causing that?"

She chuckles: "Probably the same thing that makes your palm rough."

I can just make out the books in the far corner near the door. They're not on shelves, not really in any order, but piled haphazardly two feet high. Somewhere in the pile is the book we fight about. She explains in detail her thesis of ironic, yet sexist symbolism. In the telling she loses her breath, and at the end she pants and stares triumphantly at me.

"That's nuts," I tell her.

"Chauvinist pig," she says.

"Jesus Christ," I say. I slouch down and wait for the attack.

"Pig," she says.

She need say no more. I waver, and her eyes give the fatal blow; her glare is like a death crazed army crashing itself against my feeble defenses, until I finally yield to the sweetest defeat, self-righteous guilt.

"Don't try to be nice to me now, you pig," she says.

I chuckle to myself in the dark; she stirs in her sleep. Again, I pull back the blind from the window. I am drawn to the lamp on the corner like a moth, but I am the only moth here. The others have yet to be born. The snow is still on the ground--dirty, spring snow with months of traffic grime coming to the surface. But the streetlight makes the snow look clean, fresh, alive as if it had fallen this night. The light, reflecting off the snow, is like Aegean-blue water. I sit back and let the blind fall shut. I have to squint to see very far into the room--it is growing wider than the Aegean, and a salty spray is filling my eyes.

Everything now, all my pieces fly back at me. Everything that is me cuts into me, scratches me, scrapes me, pain upon pain, until my senses die; no hearing, no sight, no smell nor taste, no touch, but I can feel. I can feel that warm figure sleeping next to me. I can feel each breath, each memory, each hurt. I can even feel her dreams, both happy and sad. I can feel her dreams becoming mine; they are my dreams. Most of all I can feel beauty--outside and inside, so much deep inside her that there's no more room, and it flows out, covering me, raining down on everything. This is hell, I tell myself: eternal damnation is a slow walk through this tiny room.

A hand softly touches my arm; she's not sleeping either.

"Go to sleep," she says. Her voice is far away, but clear, and it brings me back.

"Yes," I say, "That's a good idea."

I lie down. My senses return. I can smell her warmth. I can touch her hand. I can see her profile in the dim light.

"I love you," I say.

"Yes," she says even further away, but warm and alive.

I go to sleep. She is all around me.

When the alarm rings, it is too early, and I am too tired. I get up anyway. I have to go to work. The house this little room is in is quiet. No one else is up,

and that pleases me. I don't want embarrassed shame this morning, no knowing glances. As I'm putting on my clothes, she stirs. She, too, must get up early this morning. She watches me, her eyes half shut, but we don't speak.

My clothes cover me, but I feel as if they are covering nothing, as if they move, but I'm not in them. I'm not there; the only thing left is one last memory dropping slowly like a forgotten, slimy tear staining a dead cheek.

"I'm going away," she had said, "We can't be together any more."

"Yes, I know. You're right," I had said.

I am ready to go. I must leave; I must stay. The distinction is lost on me. I lean down and kiss her. Her arms circle my neck too lovingly and too long. Her face is wet, or maybe it's mine. I walk to the door.

"Don't forget to take care of my stuff," she says.

"I won't," I say, "Have fun."

"I'll try."

My throat hurts, and my eyes burn, as a I close the door. I walk out--it is a bleak spring day. The sun cowers somewhere behind a cloud.

When I burst into the room later that day, I pray for the impossible. I pray that all is as it was: nothing's changed. I pray she's sitting down, watching tv. I pray she's smiling, waiting for me to get home. She gives me a kiss, and we are happy. I pray many foolish things.

The boxes are piled up near the window. The stereo and posters are in boxes. The blind is off the window. The records, books, everything is in brown cardboard boxes. The room suddenly smells stale and musty, as if nothing had ever lived there.

She is gone, but I am here. I try to let numbness, emptiness, take over. This is practical, I tell myself, as I carry the first box down to my car. And for every box, I tell myself, I will send them away tomorrow. Yes, that is the practical thing to do. Every box I want to be just as it is: If light, full of nothing, if heavy, full of a lot of nothing.

I want, but I can't have. One box I want to throw through the window, another to set down, open, and gently replace the contents where they were. I want everything to be as it was, or I want it never to have been. I want, but I can't have.

I come to the last box. As I pick it up, I see that something is written on it. Something is written in bold letters with magic marker. It says:

I LOVE YOU.

I put the box down. I must laugh, though I'd rather not. I would rather scream, cry. Even better weep, weep blood, but I can't have that either.

I lift the box again. It is the heaviest box of them all; I laugh. I laugh out loud. Even the distinction between my emotions is lost.

"Damn her," I say. I take a step: "Damn her."

And each step, damn her. It is my antiphon, every step, damn her. My strophe and antistrophe: Damn her, damn her. The door closes behind me, damn her. Damn her, the box is in the car, damn her.

But there, on the back seat of my car, is a simple message: I love you. An old saying pops into my head: If it'd been a snake, it would've bit you. What a song I sing to myself: Damn her, a snake bit you, I love you, damn her, yeah, yeah, yeah.

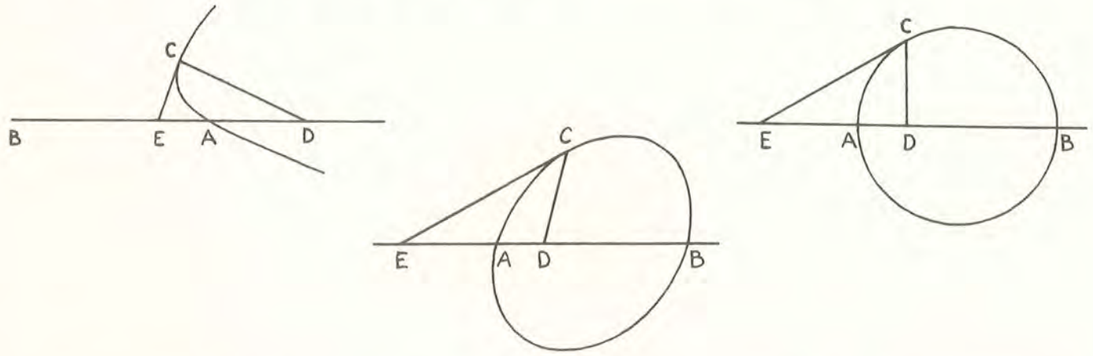
I slam the door, walk around the car, and get in behind the wheel. I lean forward and look up at the streetlamp. It is humming with energy, pulsating with life. Its light is strong and clear. That light is the only thing keeping me and everything from flying apart and into space. The light hurts my eyes. It is cold and I shiver. I drive away.

I can't see the streetlight anymore. I imagine that someone, somewhere, is paid to turn the streetlights off in the morning, but I hope he forgets this one. I hope it stays on a long time. THE END

An Appreciation of Apollonius I.34

Henry Higuera

As upperclassmen will remember, in Book I of his Conics Apollonius demonstrates that there is a surprising and pleasing relationship between the "harmonic mean" and the tangent to an ellipse, hyperbola, or circle:



Specifically, in I 34 he proves that if AB is the transverse, CD is an ordinate, and E is located so that AB is a harmonic mean between BD and BE, then EC is tangent to the section. One of my very favorite memories from sophomore math is the moment when I was up at the board blithering some nonsense about I 34 and two students[1] managed to explain to me the significance of the harmonic mean.

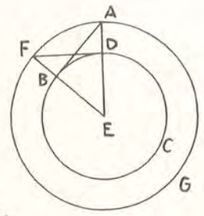
On the other hand, some of my other most vivid memories from sophomore math are of whole classes spent slogging through that monstrous proof, with its un-reconstructable construction, its two doublefold footnotes from Eutocius (I always called him "Atrocious" to myself), and Lord knows what else.[2] Remember? The proof has always bothered me, especially in comparison to the beauty of the fact it establishes, and I've spent some time trying to understand why Apollonius did it the way he did. My efforts have paid off to some degree, for I now feel I appreciate the situation which Apollonius faced and the accomplishment which his particular proof represents. This article is an attempt to spread that sense of appreciation and is dedicated to anyone who will ever go to the board to do I 34.

I. First, it seems certain that this proposition struck Apollonius and his original readers differently than it does us, because they must already have known that I 34 was true of circles. Euclid never proves it; but it follows so easily from his method of drawing a tangent from a point outside a circle (III 17) that it must have been common knowledge.

Here is Euclid's method (the actual proof is omitted):

From a given point to draw a straight line touching a given circle.

Let A be the given point, and BCD the given circle;
thus it is required to draw from the point A a straight line
touching the circle BCD.



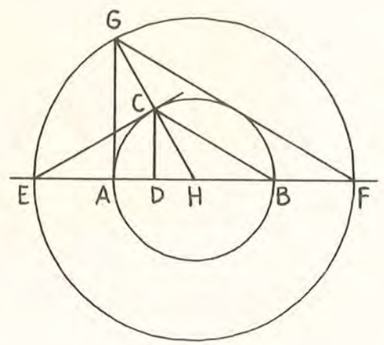
For let the centre E of the circle be taken;
let AE be joined, and with centre E and distance EA let the
circle AFG be described;
from D let DF be drawn at right angles to EA,
and let EF, AB be joined;
I say that AB has been drawn from the point A touching the circle BCD.

Here is the easy proof which demonstrates that I 34 holds for circles: Let there be a circle ACB with center H and diameter AB, CD perpendicular (i.e., ordinatewise) to AB, E on AB produced so that

BD:DA :: BE:EA

(i.e., so that AB is a harmonic mean between BD and BE), and EC joined. I say that EC is tangent to the circle ACB.

For, draw concentric circle EF.
At A erect a perpendicular to AB meeting
circle EF at G. Join HC and HG (i.e.,
do <u>not</u> assume that C is on HG: this
has to be proved).



Now clearly,

BE=AF, [C.N. 3]

while BD:DA :: BE:EA; [given]

so BD:DA :: AF:EA [Euc. V 7,11]

But BD:CD :: CD:DA [Euc. VI 8, Por.]

and AF:GA :: GA:EA, [Euc. VI 8, Por.]

so BD:CD :: AF:GA, being subduplicates of the same ratio [Euc. VI 22, note].

And the right angles GAF and CDB are of course equal [Euc. Post. 4]

so $\triangle$GAF is similar to $\triangle$CDB

and $\angle$DBC= $\angle$AFG; [Euc. VI 6]

so $\angle$DHC= $\angle$AHG as well, being their doubles. [Euc. III 20]

Therefore C <u>is</u> on GH and the construction satisfies Euclid III 17. Therefore EC is tangent to circle ACB. Q.E.D.

In other words, I 34 was not originally the proclamation of a startling new fact about circles. On the contrary, it belongs to that interesting series of propositions which shows that some well-known properties possessed by circles considered as circles also belongs to them considered purely as conic sections.[3] This proposition contributes to one of the most important subplots of the <u>Conics</u> : that suggestion that we can deepen our understanding of the complex simplicity of circles by ignoring

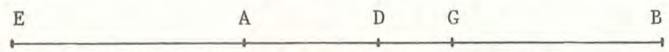
for the moment their unique characteristics and considering them merely as a "special case" of a conic section.

II. On to the proof itself. If you look at it (it's on pp. 641-3) you'll remember that it's really in two parts. First comes the terrible part, which is based entirely on Euclid, not on earlier propositions in Apollonius. Then, just after the line

rect.BD,DA: rect.BG,GA > sq.DE: sq.GE (p. 643 l. 5)

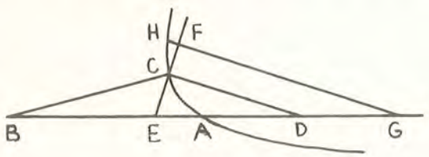
he brings in a property of conic sections for the first time (I 21), and the proof is finished in four more lines.

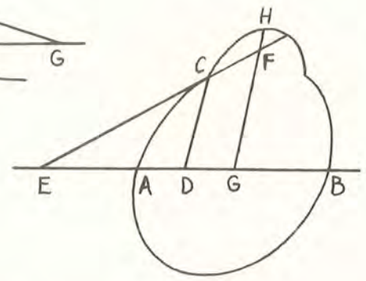
The fact that I 21 gets brought in so late may have alerted you to the important fact that r.BD,DA:r.BG,GA > sq.DE:sq.GE is a property of the harmonic mean <u>by itself</u>; it holds true <u>entirely</u> <u>independently</u> of conic sections. In fact, one could presumably prove it without constructing any extra lines at all,

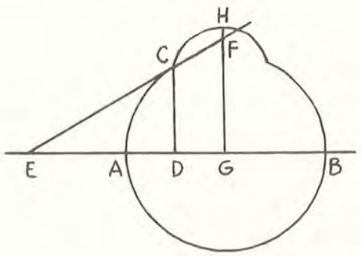


using only Euclid Bk. II and clever manipulations of ratios. (I have not succeeded in doing this, although I have proven it without any constructions by using maxima/minima calculus techniques). Furthermore, this property is not limited to lines; for example, a version of it holds for Euclidean numbers.

If this property had already been proven in some treatise on the harmonic mean, the figures to I 34 should have looked like this:







and the whole proof could have taken five lines:

For, r.BD,DA:r.BG,GA::sq.CD:sq.GH [I 21]
and sq.DE:sq.EG::sq.CD:sq.FG; [Euc. VI 4, 22]
but r.BD,DA:r.BG,GA > sq.DE:sq.EG, [Treatise on Harmonic Mean LXVII 873]
so sq.CD:sq.HG > sq.CD:sq.FG
and HG < FG [Euc. V 10]
Q.E.D.

Furthermore, this would have helped to highlight what the horrible clutter of Apollonius' proof tends to conceal--namely, that the connection between the harmonic mean and the property proven in I 34 is quite remarkably direct and intimate.

III. Now, the enunciation of the property would have to go something like this:

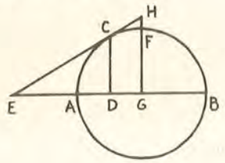
PROP. LXVII 873: If there be four unequal lines, of which the second is a harmonic mean between the first and the third and the fourth is another, random line, then the rectangle contained by the first and the difference between the first and the second has a greater ratio to the rectangle contained by the fourth and the difference between the fourth and the second than the ratio which the square on the difference between the first and the third has to the square on the difference between the fourth and the third.

This is an enunciation only Apollonius could love. Furthermore, there are four cases:

Case 1 Case 2 Case 3 Case 4

On top of that, as far as I know, this fact has no application to anything in the total universe except to I 34. So, perhaps it is not surprising that nobody ever bothered to prove it.

On the other hand, if one already knows that I 34 is true of circles and one bears in mind Euc. VI 4, 22, and 8, Por., it becomes extremely obvious that this proposition is true at least in Cases 1 and 2:

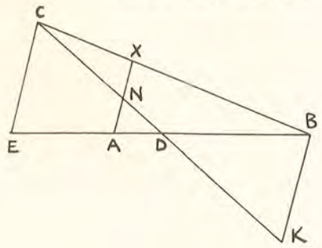


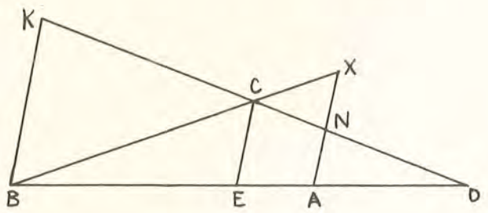
"Behold! Rect. BD,DA: rect.BG,GA > sq.DE: sq.GE!"

Notice that this by itself is already enough to prove that I 34 is true for ellipses. Maybe this is what gave Apollonius the hint for how to attack the general problem.

IV. But Apollonius obviously wanted to prove LXVII 873 without assuming that I 34 holds true for circles--otherwise the proposition couldn't take its place in the series we mentioned. In figuring out how to do this, he seems to have been helped by another private joke between him and his readers which we hoi polloi tend to miss 21 centuries later. I would bet anything short of money that the following was a commonly-known method of constructing a "third harmonic proportional":

Given AB, BD; it is required to place E so that BD:DA :: BE:EA.





At A draw a line AX, at any angle, of any length. Bisect it at N. Connect BX and DN, and produce as necessary until they meet at C. From C draw a line parallel to AN until it meets AB at E.

I say that ED:DA::BE:EA. (Easy, huh? Here's the proof.)

For, from B draw a line parallel to AN until it meets DN produced at K.

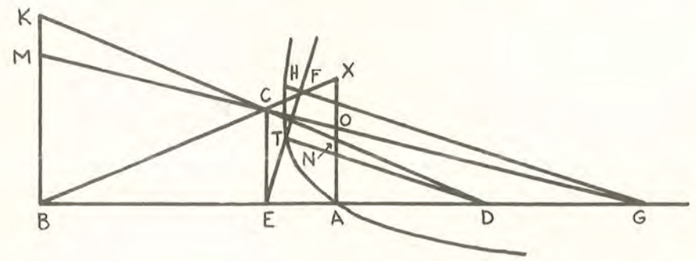
Then AN = NX,
so BK:AN::BK:NX; (Euc. V 7)
but BE:AE::BC:CX::BK:NX (Euc. VI 4)
and BD:DA::BK:AN, (Euc. VI 4)
so BD:DA::BE:EA (Euc. V 11)

Q.E.D.

Look familiar? These are the first five steps of Apollonius' proof to I 34 run exactly backwards; the constructions look exactly the same (except of course for the angles) as the correspondingly-lettered constructions in Apollonius' figures. No wonder he was able to figure out that AN equalled NX! I'm less impressed by that than I used to be.

On the other hand, the proof now looks impressive in an entirely new way. To a reader familiar with this construction, the first part of the proof emerges as an extremely clever and resourceful use of a familiar old device, instead of appearing mind-bogglingly oracular and weird, as it does to us.

Also note that in his reverse version (i.e., to prove that AN=NX) Apollonius didn't have to use the particular lengths and angles he did. Any AX bisected at N would have served to prove LXVII 873. By making C in our Figure 5 be the point of tangency in his proof, all he did, basically, was save himself an extra point and a couple of extra lines on his figures (because that way CD is set up an ordinate and CE turns out to be the tangent). The proof would have been just as valid if he'd set up perpendiculars at A, B, and E, with C up somewhere in mid-air, and not brought up the ordinate and tangent until he needed them in the last five lines of the proof:



Beautiful. This is a figure not even Apollonius could love.

To my mind, after all this muddling and fiddling with I 34, the great difficulty and most admirable achievement of Apollonius' way of proving it is that, using this commonly-known construction, he found a method of proof so powerful that he could show that all four cases of LXVII 873 were true with the same steps. It looks like he really wanted to be able, in I 34, to proceed just as he did in, say, I 21: he really wanted to show that Cases 1 and 2 of LXVII 873 (which only apply to the ellipse and circle) and cases 3 and 4 (which only apply to the hyperbola) have the

same kind of inner kinship which the circle, ellipse and hyperbola have among themselves. That he managed to do this is a mark of the sure instinct, subtlety, and ambition of his great genius.

NOTES

[1]Andy Freda and Jeremy Lauer (Class of 1986).

[2]Things are made worse, too, by the fact that Eutocius' N. 2 is very clumsy and roundabout. If you study it you can write a proof of your own that's three lines shorter.

[3]Other propositions in the series: I 21 (compare Euc. VI 8, Por. and remember that the upright always equals the transverse in a circle, a fact which actually follows from Apoll. I 5); I 32 (compare Euc. III 16); I 47 (compare Euc. III 3); II 6 (compare the other half of Euc. III 3), and II 26 (compare Euc. III 4). It's worth wondering why Apollonius doesn't mention circles in I 15 and I 30. He's clearly drawing some kind of line here (no pun intended).

ENERGEIA

St. John's College
Annapolis, Maryland 21404

Non-Profit Org.
BULK RATE
U. S. POSTAGE
PAID
PERMIT No. 120
ANNAPOLIS, MD.