The background of the book cover features a dense, abstract pattern of white, irregular, organic shapes resembling cells, pores, or microscopic organisms. These shapes are concentrated in the upper left quadrant and fan out towards the bottom right, creating a sense of depth and movement. The overall effect is reminiscent of a microscopic view of a biological or geological structure.

Nick Sousanis

UNFLATTENING

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DEDICATION

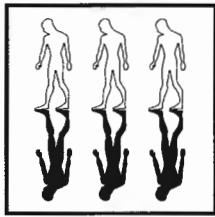
For Rosalie Anne Goodbear Sousanis and all the possibilities that lie ahead for her . . .



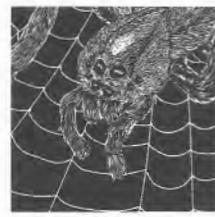
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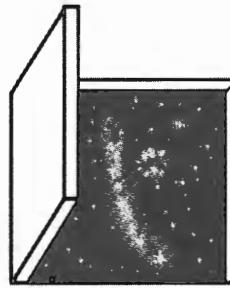
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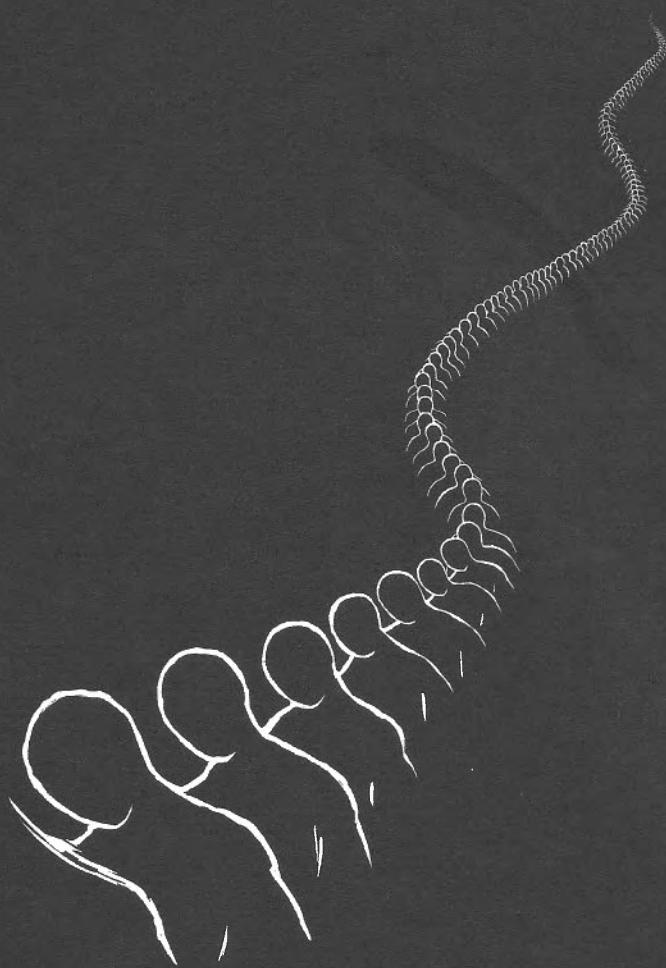
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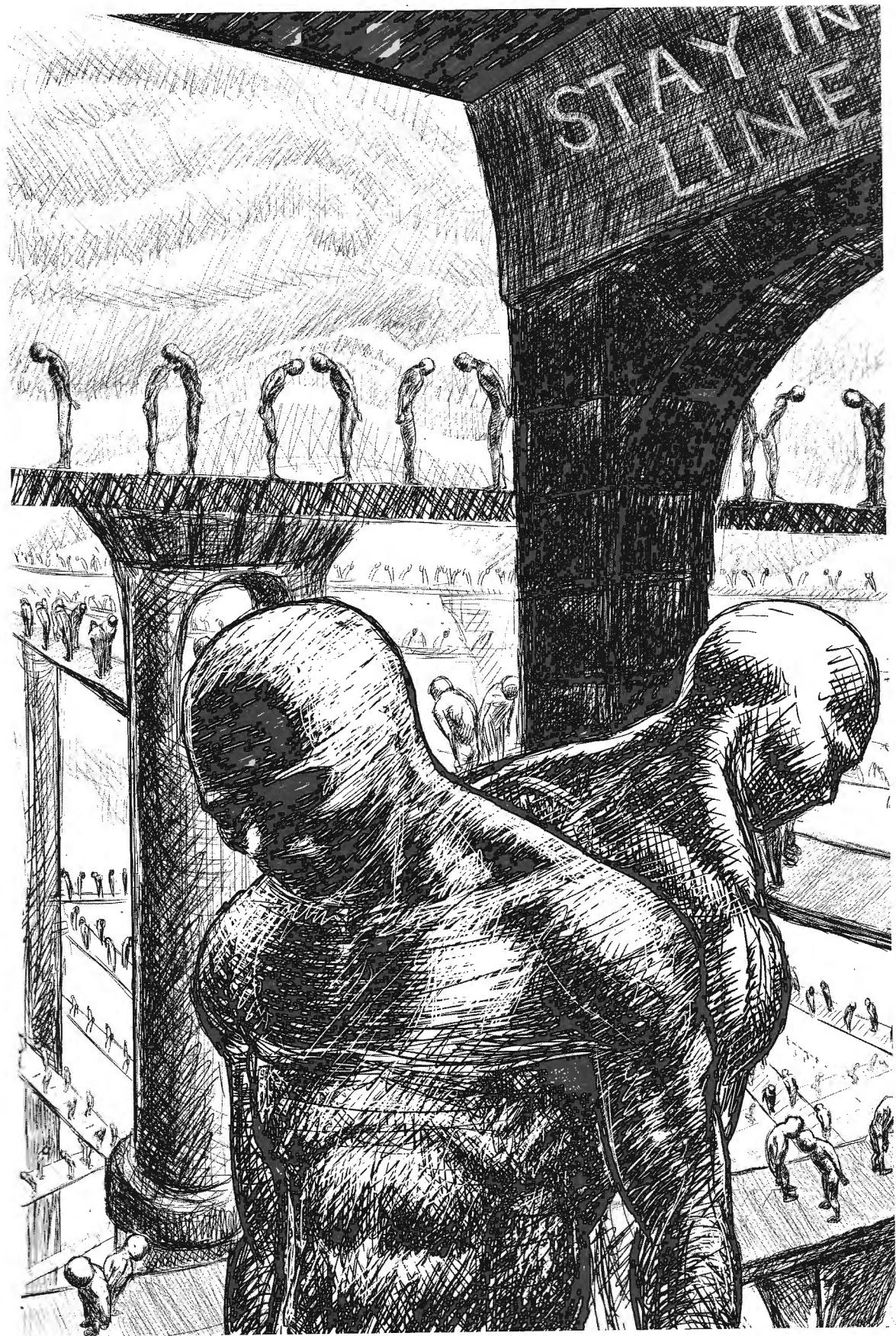


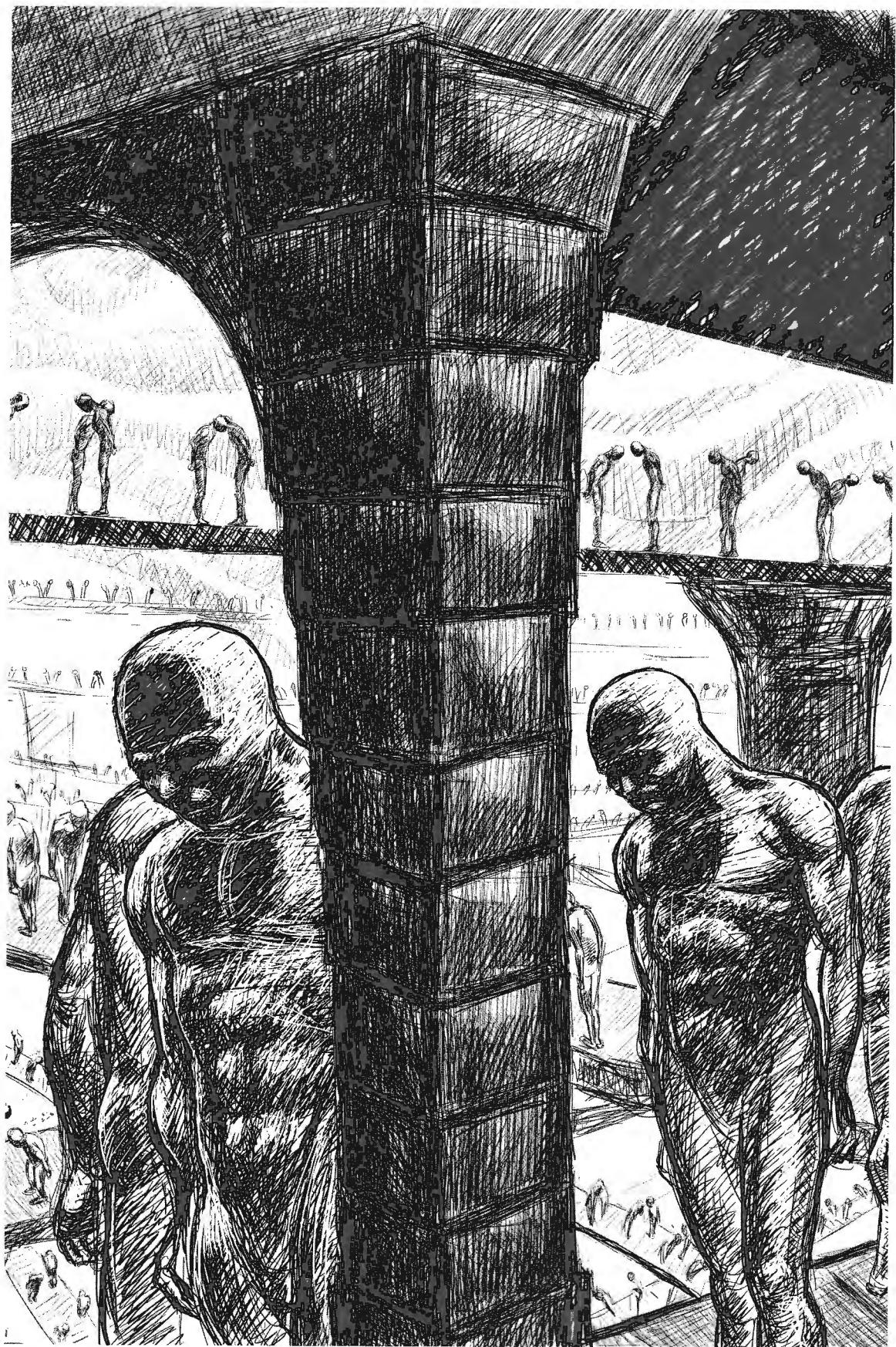
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FLATNESS



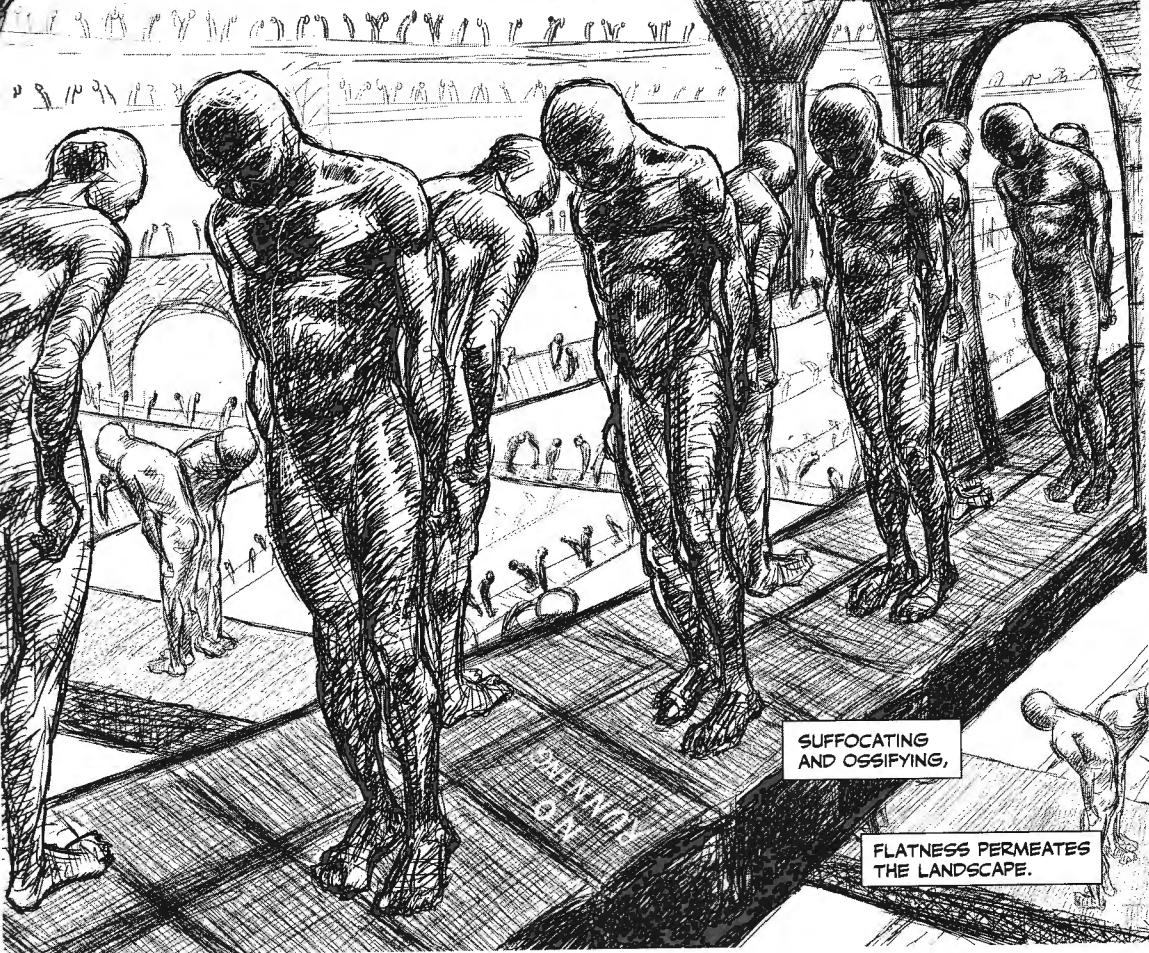






LIKE A GREAT WEIGHT
DESCENDING...

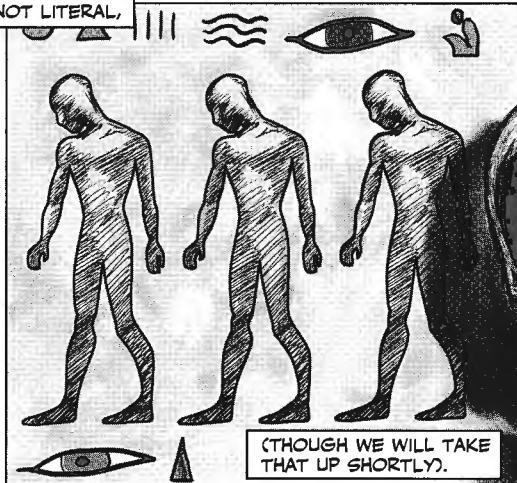
MAINTAIN
PROPER DISTANCE



SUFFOCATING
AND OSSIFYING,

FLATNESS PERMEATES
THE LANDSCAPE.

THIS FLATNESS
IS NOT LITERAL.



NO. IT CLOAKS ITS TRUE
NATURE UNDER A
HYPER-REAL FAÇADE.

(THOUGH WE WILL TAKE
THAT UP SHORTLY).



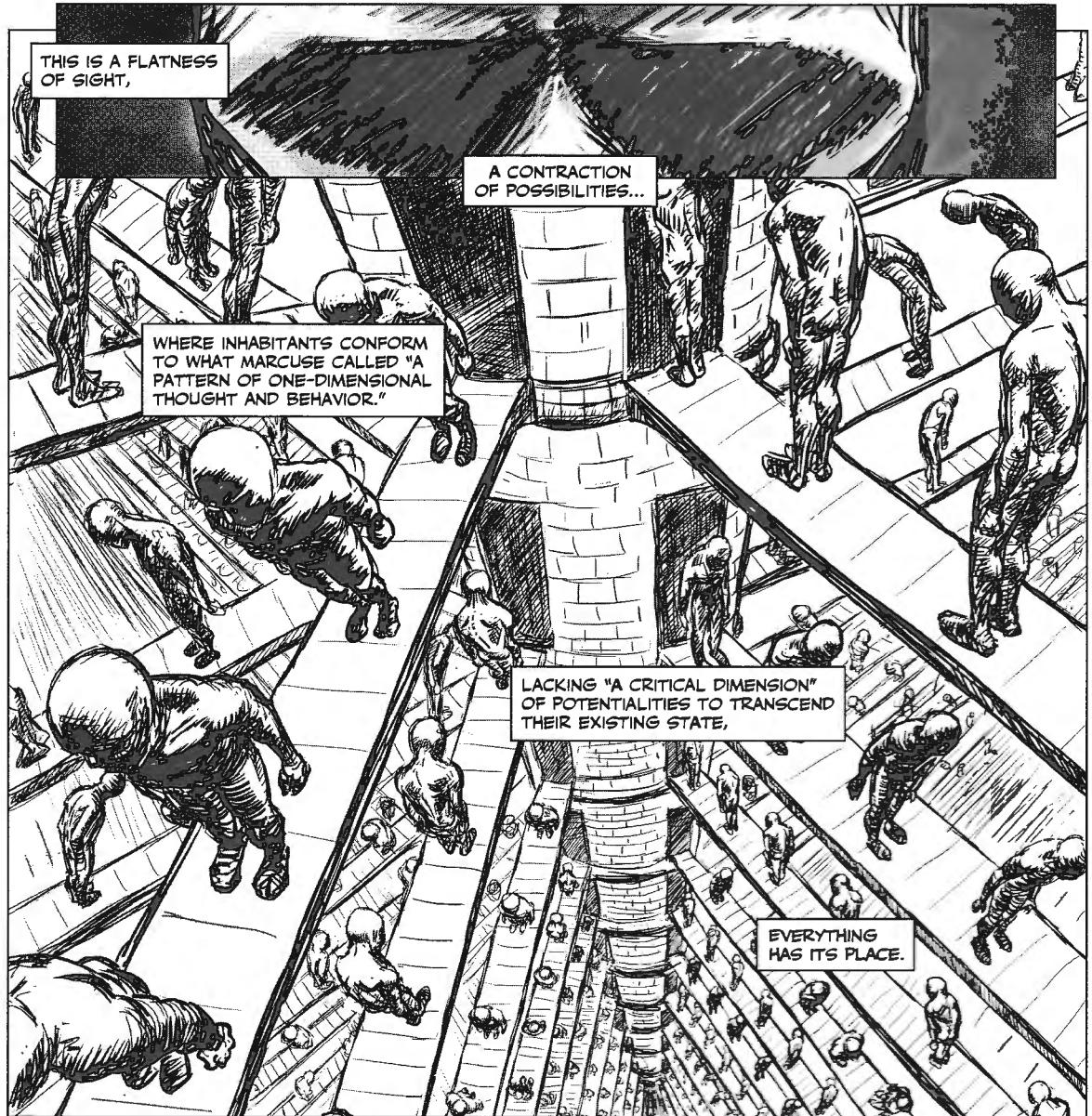
THIS IS A FLATNESS
OF SIGHT,

A CONTRACTION
OF POSSIBILITIES...

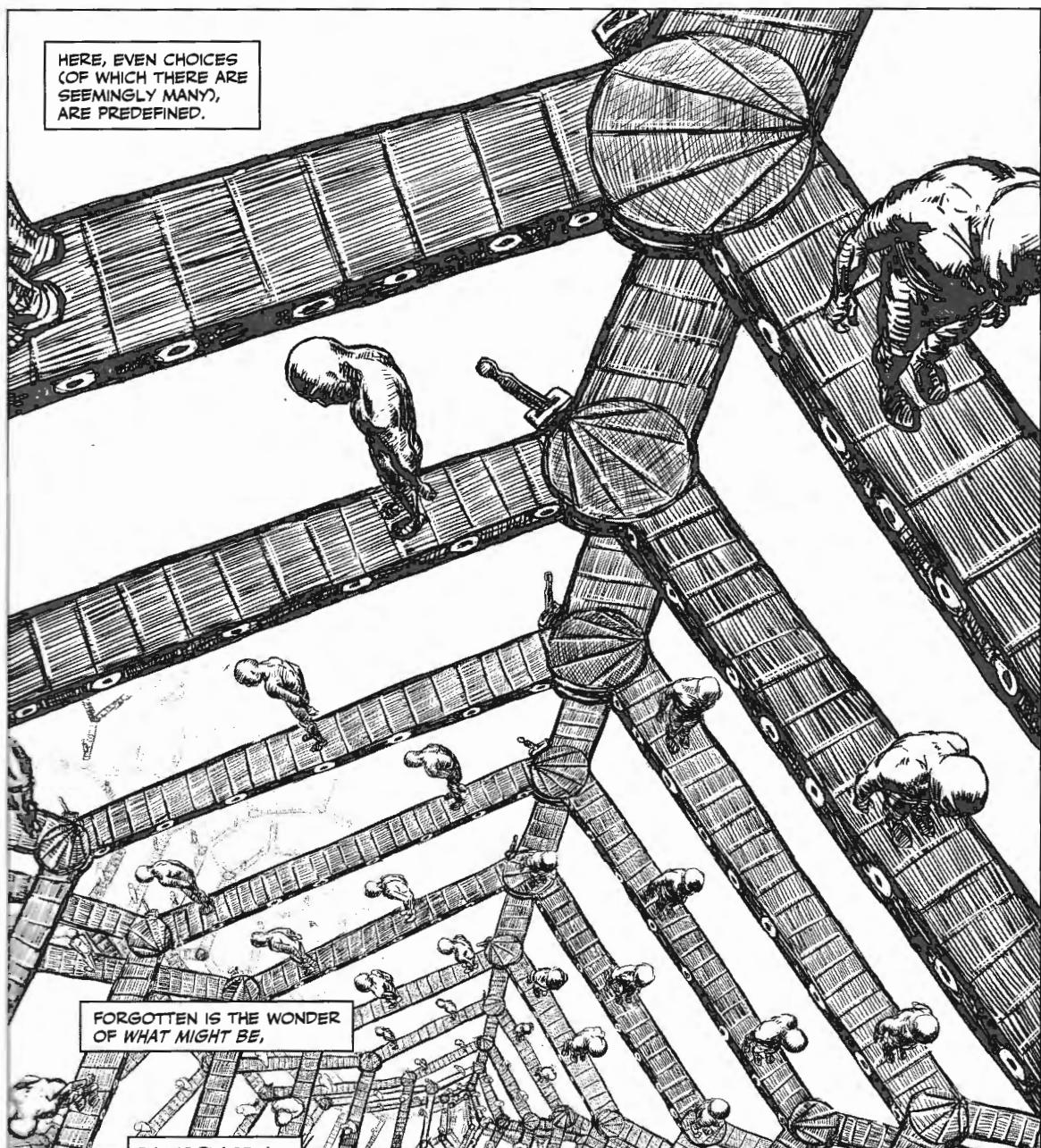
WHERE INHABITANTS CONFORM
TO WHAT MARCUSE CALLED "A
PATTERN OF ONE-DIMENSIONAL
THOUGHT AND BEHAVIOR."

LACKING "A CRITICAL DIMENSION"
OF POTENTIALITIES TO TRANSCEND
THEIR EXISTING STATE,

EVERYTHING
HAS ITS PLACE.



HERE, EVEN CHOICES
(OF WHICH THERE ARE
SEEMINGLY MANY),
ARE PREDEFINED.



FORGOTTEN IS THE WONDER
OF WHAT MIGHT BE,

IN ITS PLACE, A
SINGLE CHORUS...

THIS IS HOW IT IS.

SO PERVERSIVE ARE
THE CONFINES,

INHABITANTS
NEITHER SEE THEM

NOR REALIZE THEIR
OWN ROLE IN
PERPETUATING THEM.

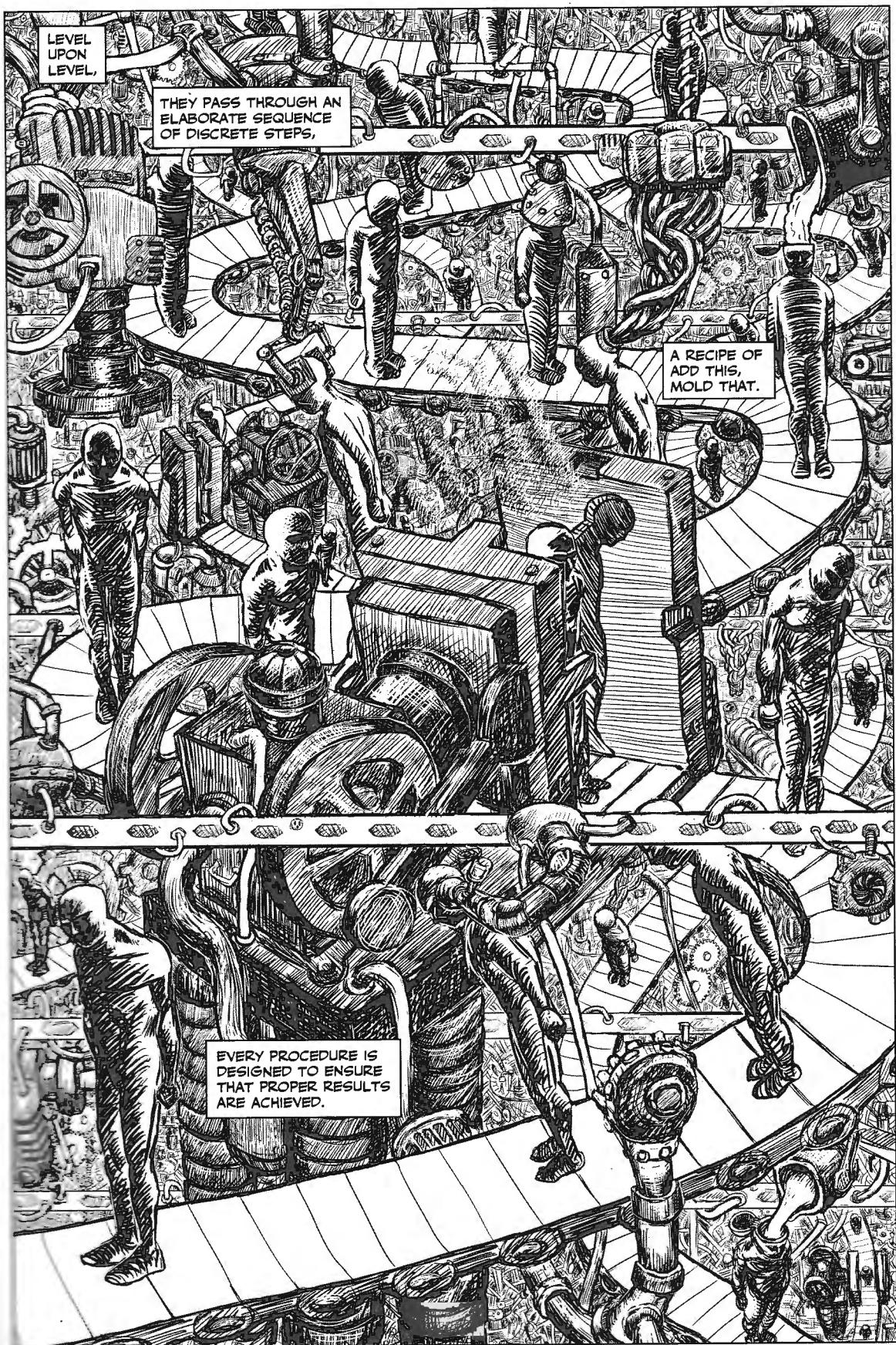
FOR IT STARTS EARLY.

NEARLY AS SOON
AS THEY CAN
MAKE TRACKS
OF THEIR OWN,

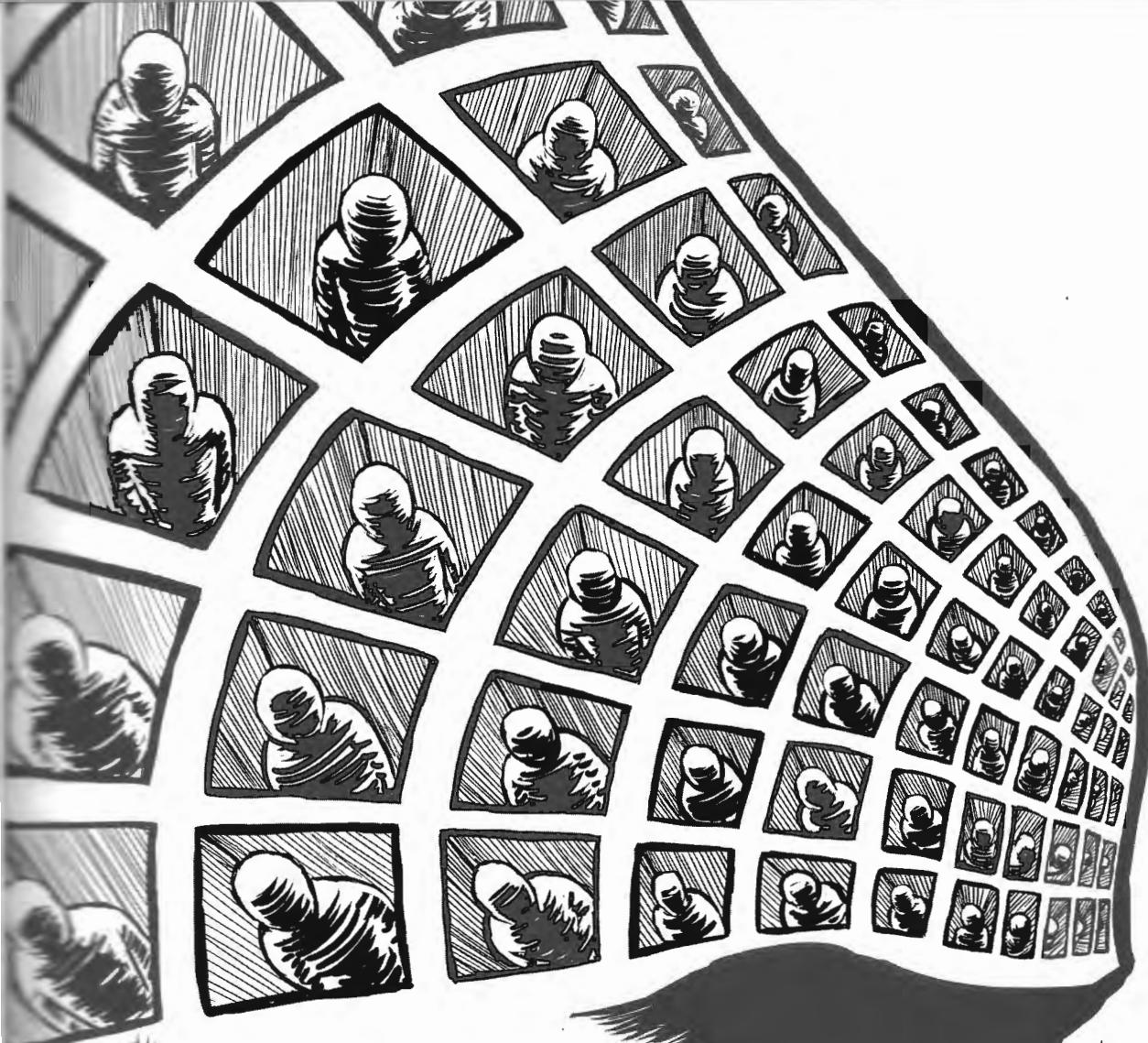
THEY ARE SORTED OUT
AND PUT ON TRACKS,

ASSIGNED
PATHS,

AND SENT FORTH TO
RECEIVE INSTRUCTION.

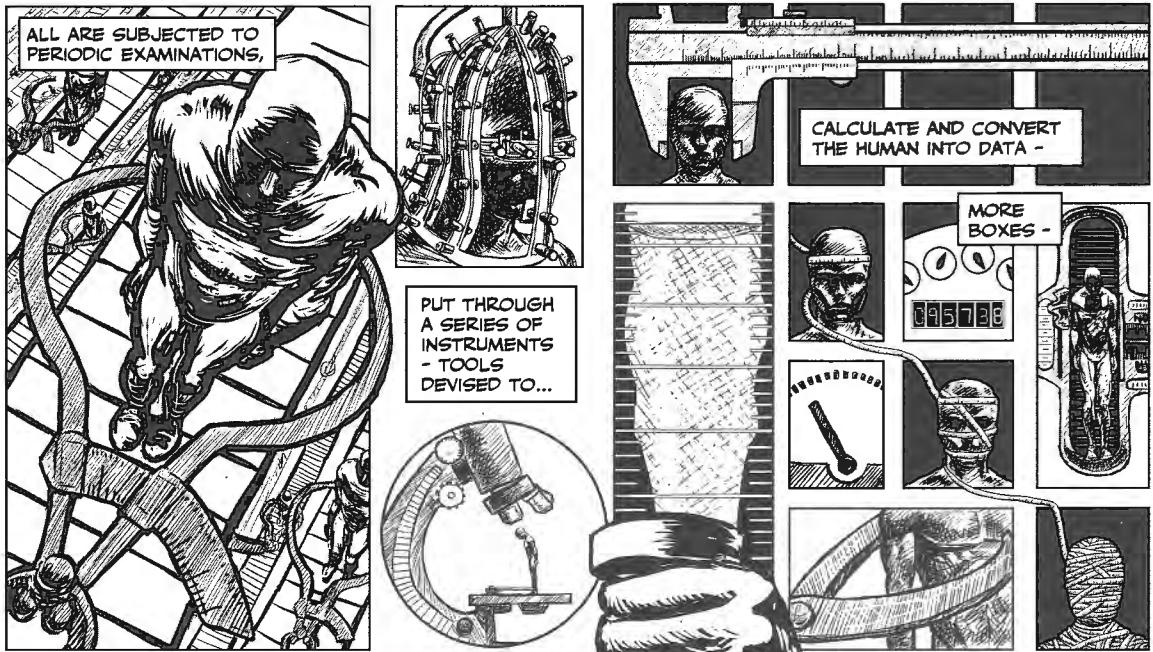






THESE ENCLOSURES
BECOME INTERNALIZED.

WHAT WAS OUTSIDE IS
REPLICATED WITHIN.

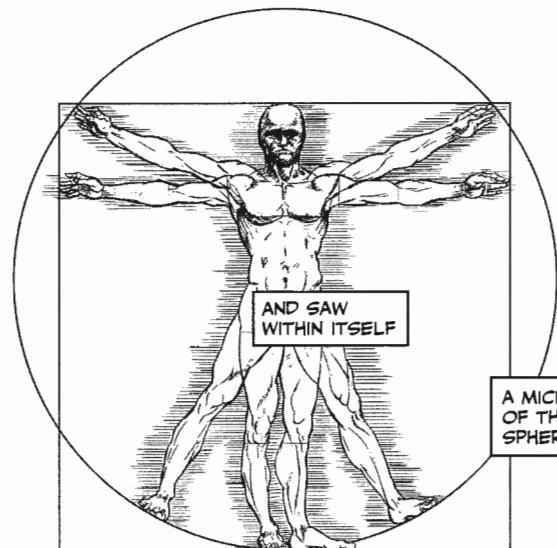


SQUEEZED INTO
THE SAME SLOTS,

WHAT COMES OUT IS
INTERCHANGEABLE...

STANDARDIZED.

THIS CREATURE, WHO
ONCE ATTEMPTED TO
DEFINE THE UNIVERSE
THROUGH ITS OWN
PROPORTIONS,



A MICROCOsm
OF THE GRANDER
SPHERES,

NOW FINDS
ITSELF
CONFINED,

BOXED INTO
BUBBLES OF
ITS OWN
MAKING...

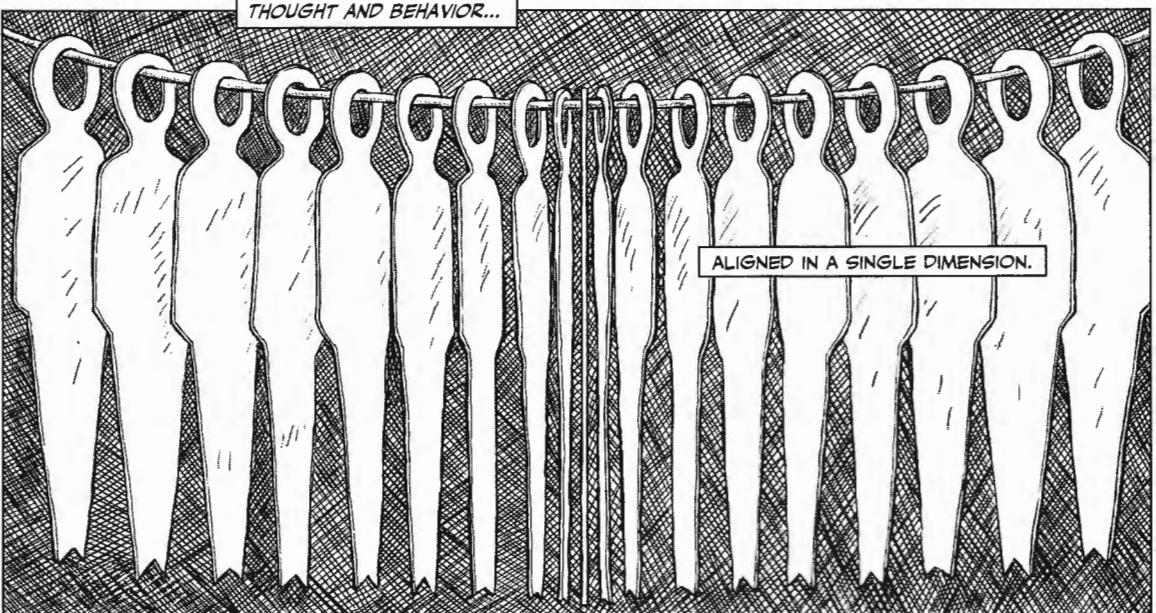


ROW UPON ROW...

UPON ROW.

THOUGHT AND BEHAVIOR...

ALIGNED IN A SINGLE DIMENSION.

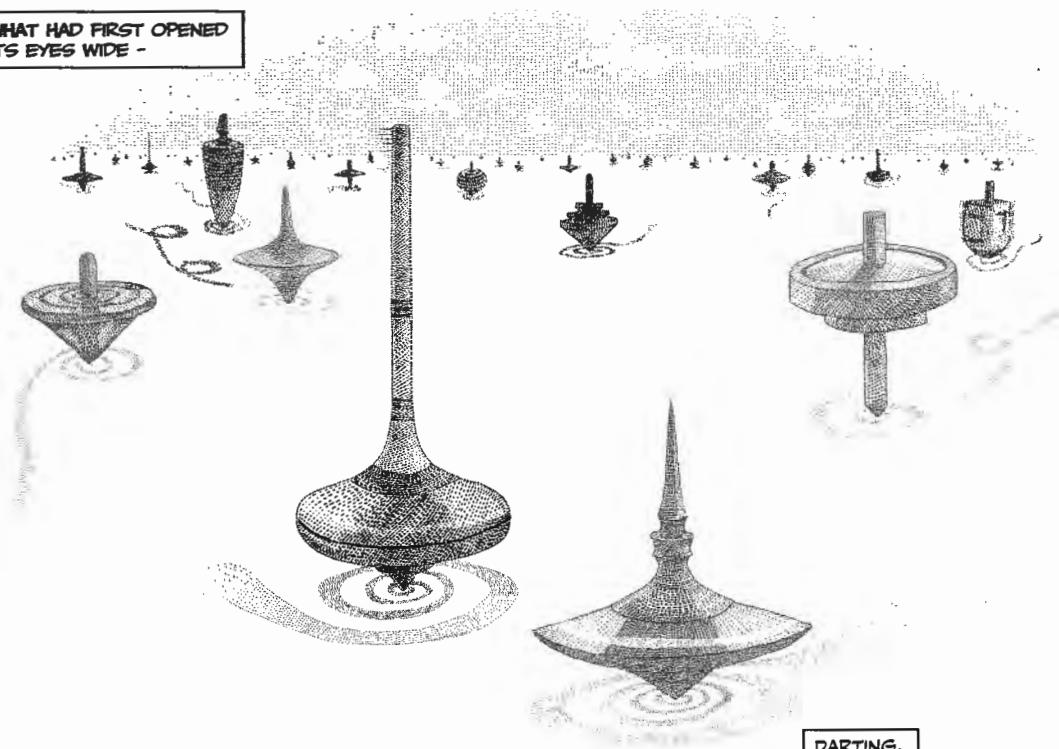


LOCKSTEP,

THEY WALK
THE LINE...

THEY HAVE
BECOME.

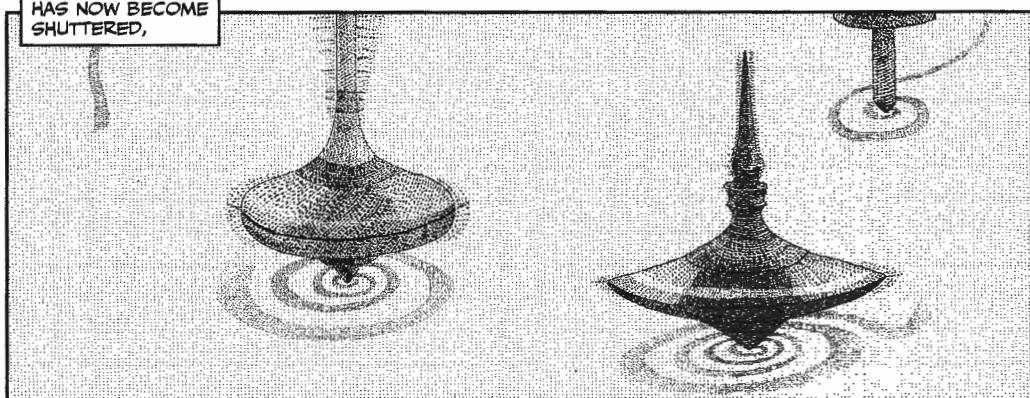
WHAT HAD FIRST OPENED
ITS EYES WIDE -



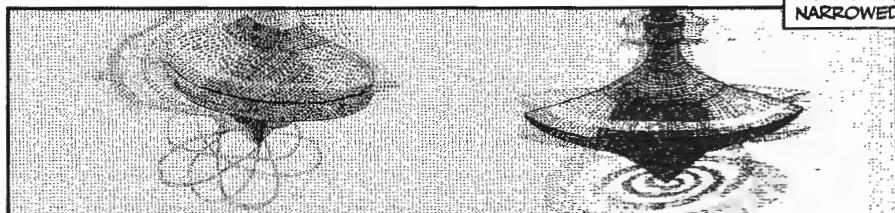
DARTING,
DANCING,

ANIMATED AND
TEEMING WITH
POSSIBILITIES -

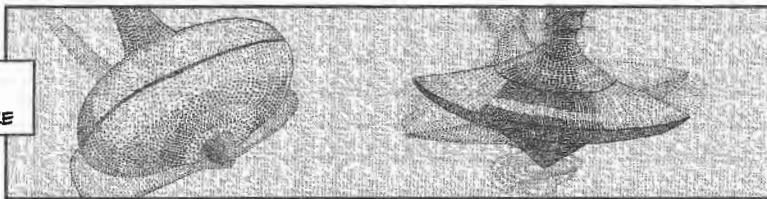
HAS NOW BECOME
SHUTTERED,



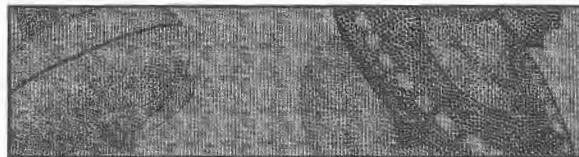
ITS VISION,
NARROWED.



THE POTENTIAL
ENERGY IN THIS
DYNAMIC CREATURE



CURTAILED,



NEVER SET
IN MOTION



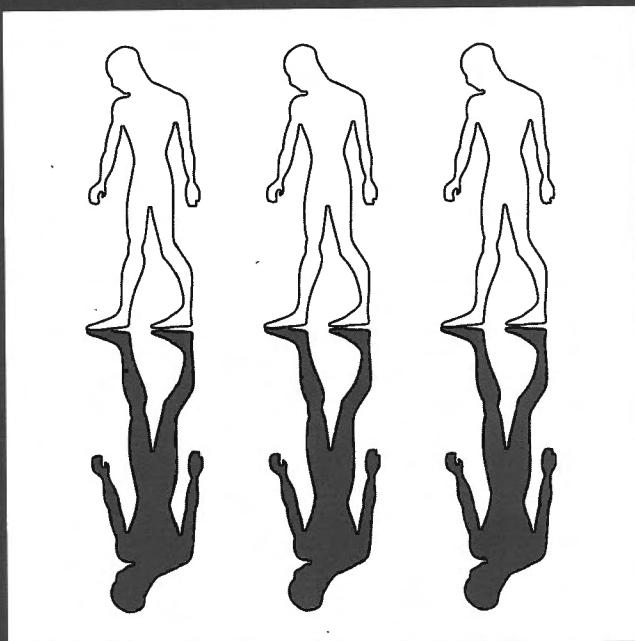
LEAVING ONLY
FLATNESS.





interlude

FLATLAND





HAVING BEEN, AS MARCUSE
PUT IT, "REDUCED TO THE
TERMS OF THIS UNIVERSE,"

THEY EXIST AS NO MORE THAN
SHADES, INSUBSTANTIAL AND
WITHOUT AGENCY.

IN THIS REGARD, THEY RESEMBLE THE TWO-DIMENSIONAL GEOMETRIC INHABITANTS OF EDWIN A. ABBOTT'S FLATLAND.

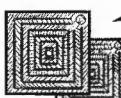


TO UNDERSTAND WHAT FLATLANDERS SEE, LOOK FROM ABOVE AT A PENNY ON A TABLE, THEN LOWER YOUR GAZE. THE CIRCLE BECOMES AN OVAL, SQUISHING GRADUALLY UNTIL, AS YOUR EYE REACHES TABLE LEVEL, ONLY A STRAIGHT LINE REMAINS.



THIS IS WHAT FLATLANDERS SEE.

THIS IS THEIR ENTIRE WORLD.

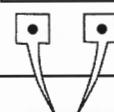


THE NARRATOR, A SQUARE NAMED 'A. SQUARE,' IS LAUNCHED ON A JOURNEY OF DISCOVERY WHEN HE RECEIVES A VISION OF A LOWER DIMENSION - "LINELAND."

LINES AND DOTS, ALL EXISTING ON AND MOVING ALONG A SINGLE LINE.



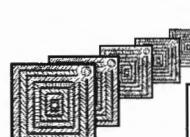
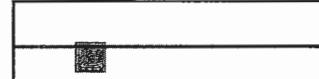
(THIS IS WHAT LINELANDERS SEE.)



PASSING THROUGH THEIR LINE A. SQUARE APPEARS AS ONE OF THEM.



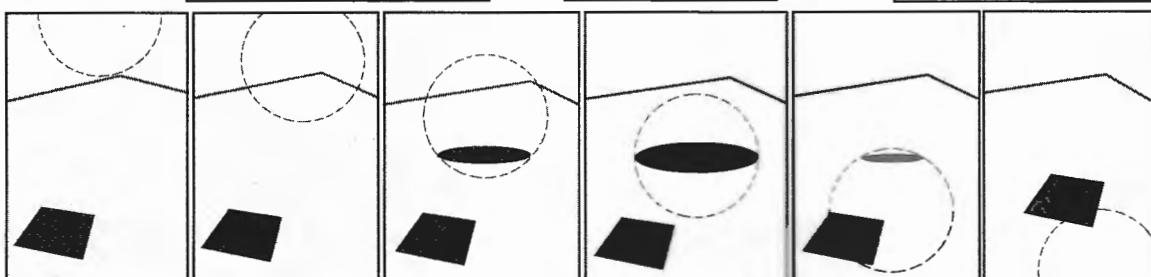
HIS ATTEMPTS TO EXPLAIN TWO DIMENSIONS ALL FELL ... FLAT.

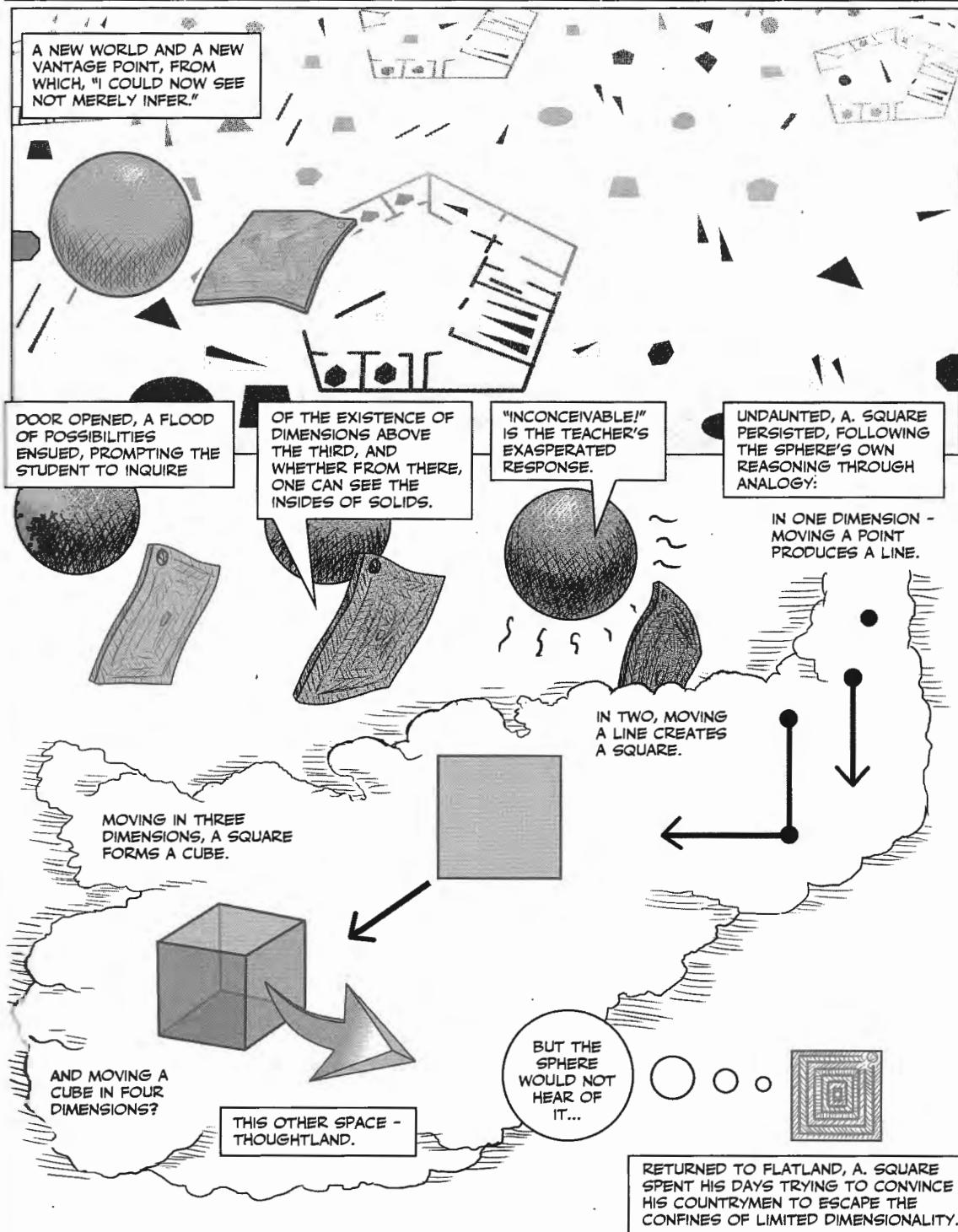
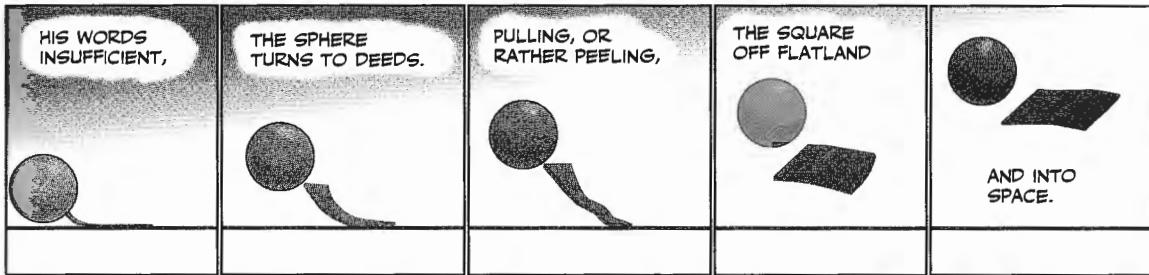


THE SQUARE NEXT RECEIVES A VISITOR CLAIMING TO BE FROM THE THIRD DIMENSION,

WHO APPEARS AS A CIRCLE STRANGELY VARYING IN SIZE.

JUST AS LINELANDERS COULDN'T CONCIEVE OF MOTION IN A DIRECTION OFF THE LINE - THE SQUARE COULD NOT COMPREHEND THE NOTION OF "UPWARDS NOT NORTHWARDS."







SUCH IS THE CASE WITH OUR FLATLANDERS, TRAPPED WITHIN THE BORDERS OF THEIR VISION.

UNABLE TO IMAGINE OTHERWISE.

DISRUPTING THESE DEEPLY INGRAINED PATTERNS TAKES A PROFOUND NUDGE - AS THE SPHERE GAVE TO THE SQUARE -



A RUPTURE IN EXPERIENCE,



ILLUMINATING BOUNDARIES

AND THE MEANS TO TRANSCEND THEM.

AND WITH THAT

COMES AN UNDERSTANDING THAT WE NEED NOT BE RENDERED INANIMATE,

AND THAT EMPOWERED, ON OUR OWN TWO FEET...

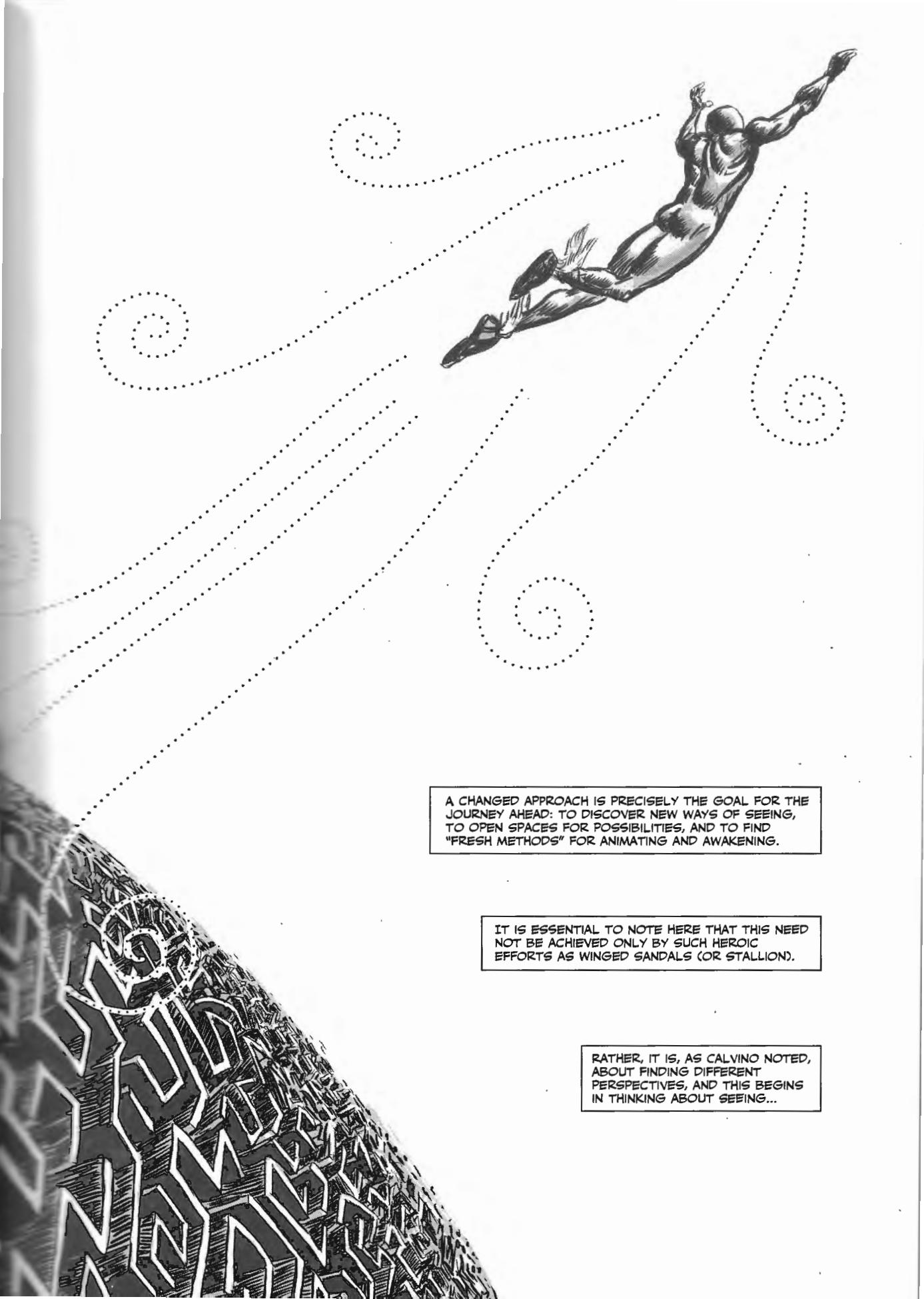


WE CAN STEP OUT...

AND LOOK
ANEW.

ITALO CALVINO WROTE, "WHENEVER HUMANITY SEEMS CONDEMNED TO HEAVINESS, I THINK I SHOULD FLY LIKE PERSEUS INTO A DIFFERENT SPACE. I DON'T MEAN ESCAPING INTO DREAMS OR INTO THE IRRATIONAL. I MEAN THAT I HAVE TO CHANGE MY APPROACH, LOOK AT THE WORLD FROM A DIFFERENT PERSPECTIVE, WITH A DIFFERENT LOGIC AND WITH FRESH METHODS OF COGNITION AND VERIFICATION."





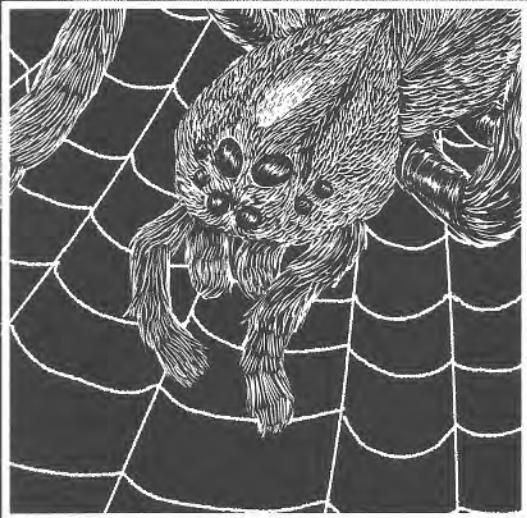
A CHANGED APPROACH IS PRECISELY THE GOAL FOR THE JOURNEY AHEAD: TO DISCOVER NEW WAYS OF SEEING, TO OPEN SPACES FOR POSSIBILITIES, AND TO FIND "FRESH METHODS" FOR ANIMATING AND AWAKENING.

IT IS ESSENTIAL TO NOTE HERE THAT THIS NEED NOT BE ACHIEVED ONLY BY SUCH HEROIC EFFORTS AS WINGED SANDALS (OR STALLION).

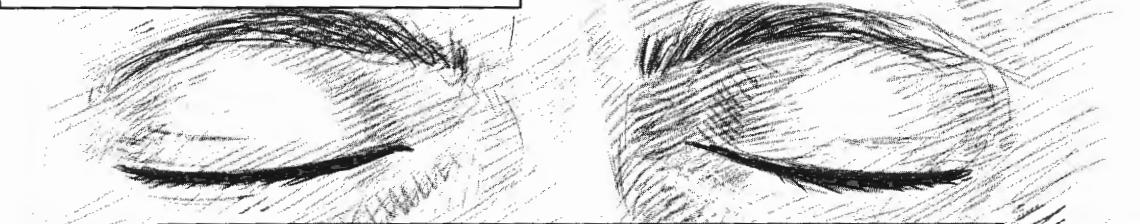
RATHER, IT IS, AS CALVINO NOTED, ABOUT FINDING DIFFERENT PERSPECTIVES, AND THIS BEGINS IN THINKING ABOUT SEEING...

two

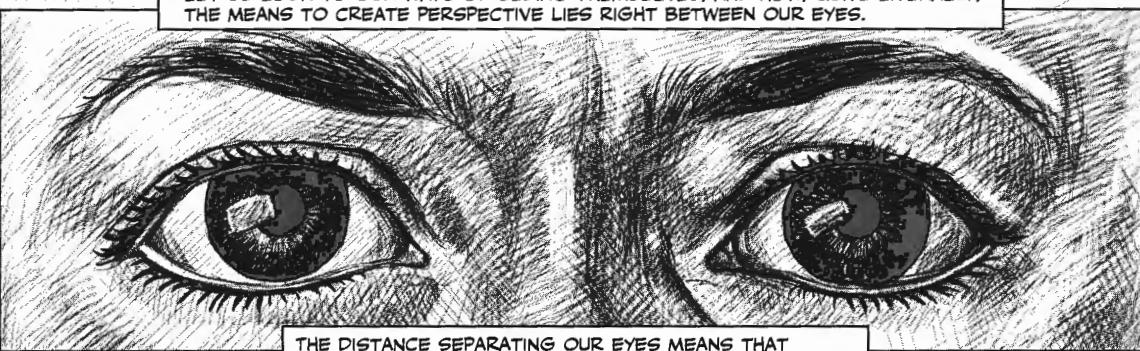
THE IMPORTANCE OF SEEING DOUBLE AND THEN SOME



IN SEEKING NEW APPROACHES FOR OPENING EXPANSIVE SPACES AND AWAKENING POSSIBILITIES,



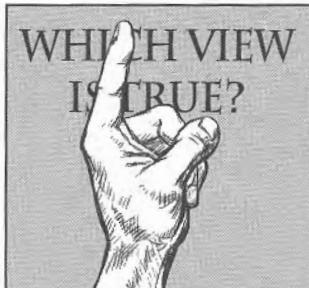
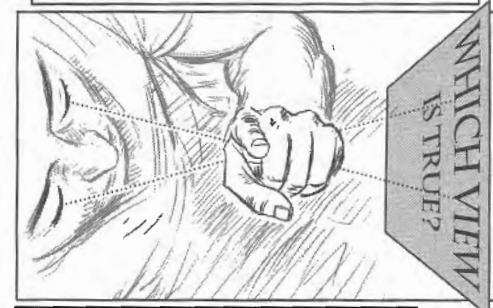
LET US LOOK TO OUR WAYS OF SEEING THEMSELVES, AND HOW, QUITE LITERALLY, THE MEANS TO CREATE PERSPECTIVE LIES RIGHT BETWEEN OUR EYES.



THE DISTANCE SEPARATING OUR EYES MEANS THAT THERE IS A DIFFERENCE BETWEEN THE VIEW EACH PRODUCES - THUS THERE IS NO SINGLE, "CORRECT" VIEW.

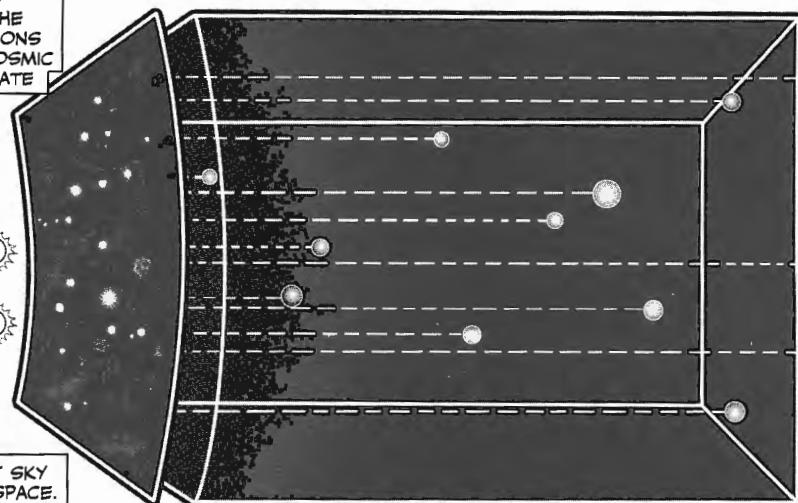
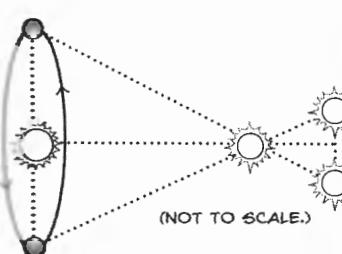
THIS BECOMES EVIDENT BY LOOKING ALTERNATELY THROUGH ONLY ONE EYE AT A TIME...

AND IT IS THIS DISPLACEMENT - PARALLAX - WHICH ENABLES US TO PERCEIVE DEPTH.



OUR STEREOSCOPIC VISION IS THE CREATION AND INTEGRATION OF TWO VIEWS. SEEING, MUCH LIKE WALKING ON TWO FEET, IS A CONSTANT NEGOTIATION BETWEEN TWO DISTINCT SOURCES.

BY MAKING A TRIP HALFWAY AROUND THE SUN, WE ESSENTIALLY CREATE TWO EYES A GREAT DISTANCE APART. THE DISPLACEMENT OF THE OBSERVATIONS FROM EACH AGAINST A DISTANT COSMIC BACKDROP ALLOWS US TO CALCULATE DISTANCES TO THE STARS,



THEREBY UNFLATTENING THE NIGHT SKY TO REVEAL THE VAST DEPTHS OF SPACE.

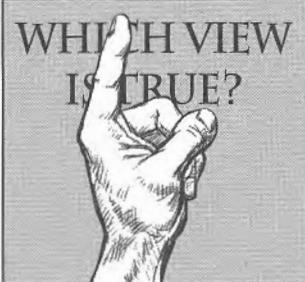
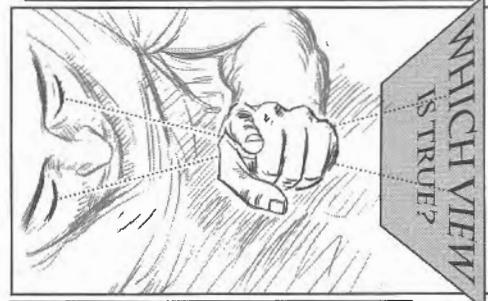
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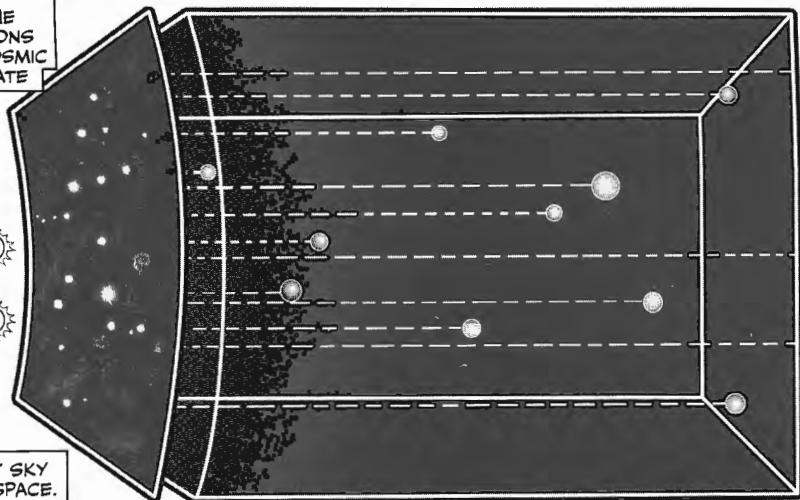
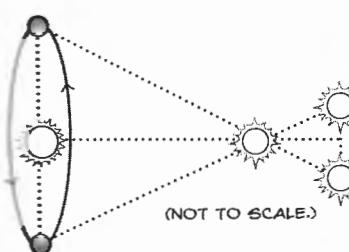
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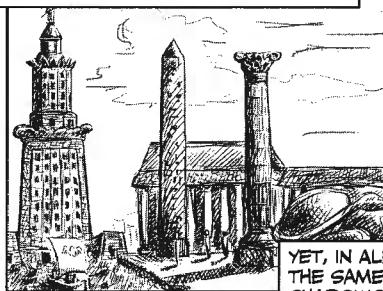


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SOME 2000 YEARS EARLIER IN ALEXANDRIA, ERATOSTHENES APPLIED A SIMILAR TECHNIQUE TO THE EARTH ITSELF.



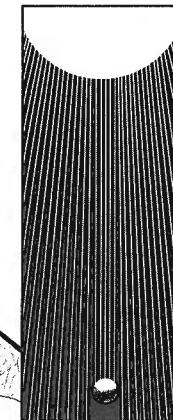
REPORTS FROM SYENE, FAR TO THE SOUTH, INDICATED THAT AT NOON ON THE SUMMER SOLSTICE, THE SUN SHONE TO THE BOTTOM OF A DEEP WELL AND COLUMNS THERE CAST NO SHADOWS.



YET, IN ALEXANDRIA AT THE SAME MOMENT, SHADOWS PERSISTED - THE SUN WAS NOT DIRECTLY OVERHEAD.



ERATOSTHENES KNEW THAT THE SUN WAS AT SUCH A GREAT DISTANCE THAT ITS RAYS STRUCK THE EARTH PARALLEL TO ONE ANOTHER,

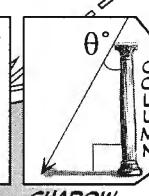


(NOT TO SCALE!)

WHICH MEANT THAT THIS OBSERVED DISCREPANCY OF SHADOWS AT THESE TWO LOCATIONS COULD ONLY OCCUR IF THE EARTH WAS CURVED (DEMONSTRATING A LONG-HELD SUPPOSITION).

ERATOSTHENES CONTINUED.

BY MEASURING THE LENGTH OF A SHADOW CAST AT ALEXANDRIA AND THE HEIGHT OF THE COLUMN CASTING IT, HE FOUND THE ANGLE OF DISPLACEMENT BETWEEN ALEXANDRIA AND SYENE.

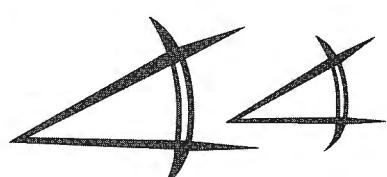


(ESSENTIALLY THE FRACTION OF THE CIRCLE SEPARATING THEM.)

$$C = \frac{360^\circ}{\theta^\circ} \times D_{AS}$$

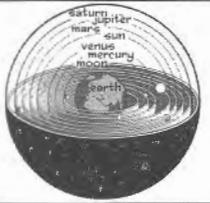
HE THEN HAD THE ACTUAL DISTANCE BETWEEN THE CITIES PACED OUT, AND USED THIS RESULT WITH THE DISPLACEMENT ANGLE TO CALCULATE THE CIRCUMFERENCE OF THE EARTH WITH GREAT ACCURACY.

TWO POINTS - TWO EYES - CONNECTED, FOSTERED AN EXPANSION OF SIGHT AND RESHAPED OUR VIEW OF THE PLANET.



THIS SUGGESTS A DEFINITION TO BUILD ON: UNFLATTENING IS A SIMULTANEOUS ENGAGEMENT OF MULTIPLE VANTAGE POINTS FROM WHICH TO ENGENDER NEW WAYS OF SEEING.

LET US PAUSE A BIT MORE
ON ASTRONOMICAL MATTERS.



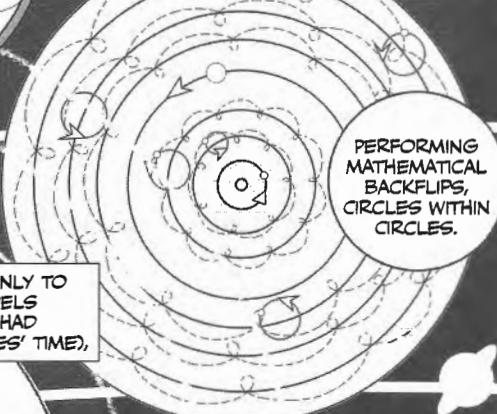
THE UNFLAT EARTH NEATLY
FIT AT THE CORE OF THE
IDEA OF HARMONIOUSLY
NESTED SPHERES -

A STATIC VANTAGE
POINT CIRCLED BY ALL.



DESPITE OBSERVATIONS OF HOW
THINGS MOVED ACROSS THE SKY THAT
BETRAYED THIS THINKING, DEEPLY
HELD BELIEFS LED TO THE DISMISSAL
OF ALTERNATIVES - AS INCONCEIVABLE
AS "UPWARDS NOT NORTHWARDS."

IN AN EFFORT TO MAKE THE
OBSERVATIONS CONFORM TO THE
IDEALS, EVER MORE INGENIOUS
MODELS WERE CONSTRUCTED -



PERFORMING
MATHEMATICAL
BACKFLIPS,
CIRCLES WITHIN
CIRCLES.

ALTHOUGH COPERNICUS SOUGHT ONLY TO
IMPROVE EXISTING SPHERICAL MODELS
(RELYING ON OBSERVATIONS THAT HAD
BEEN AROUND SINCE ERATOSTHENES' TIME),

III. Saturn
III. Jupiter
II. Mars

IV. Earth
V. Moon
VI. Venus
VII. Mercury

Sun

BY DISPLACING THE EARTH FROM THE
CENTER AND SETTING IT SPINNING, HE
UNWITTINGLY SPARKED A REVOLUTION.

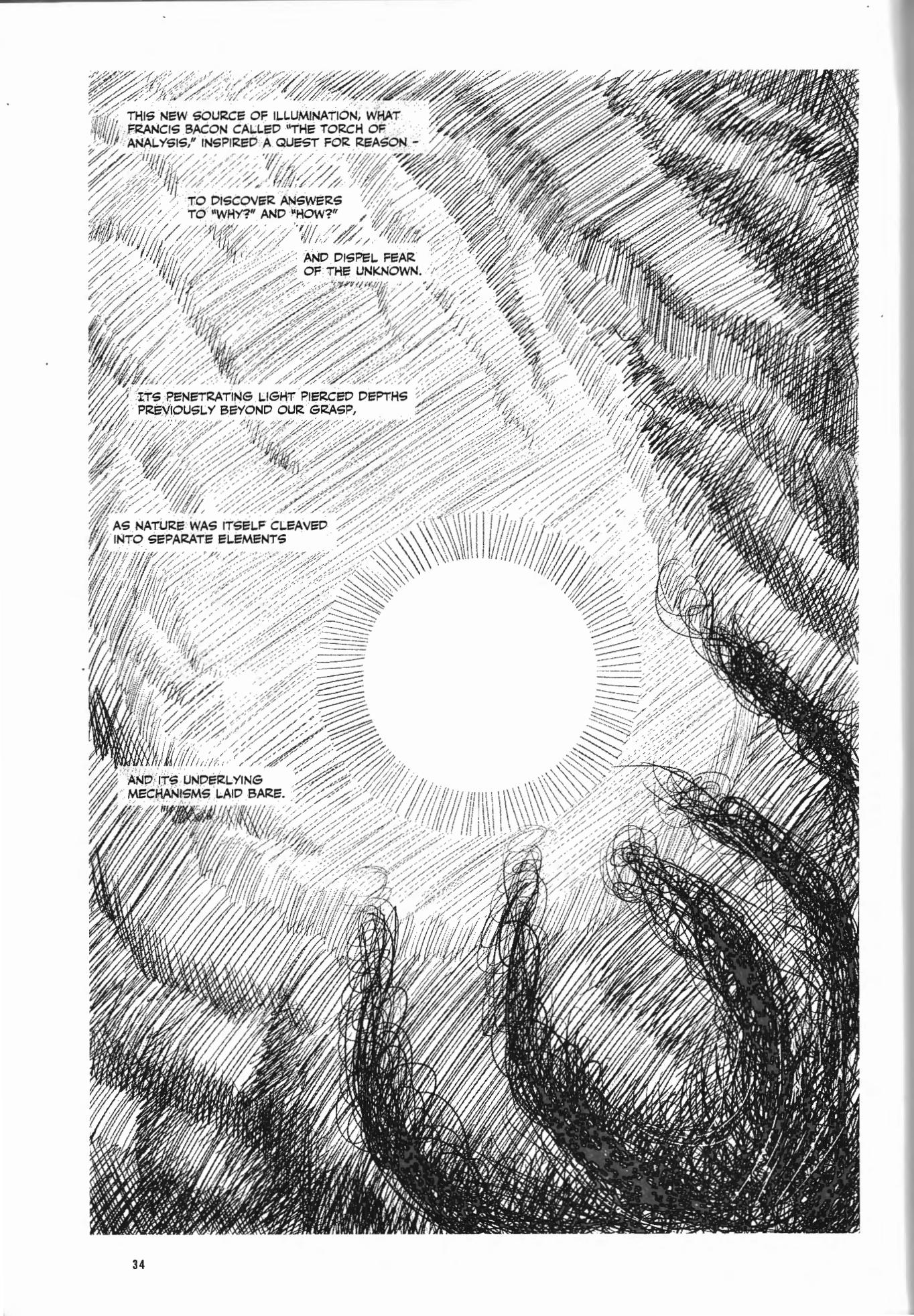
In "On the Revolutions
of the Celestial Spheres."

NOTHING CHANGED, EXCEPT THE POINT
OF VIEW - WHICH CHANGED EVERYTHING.

WHILE OTHERS WOULD
EXPAND UPON THIS WORK,

THE FUNDAMENTAL SHIFT OF
VIEWPOINT IRREVOCABLY RUPTURED
A STASIS OF THOUGHT, ITS
IMPLICATIONS RIPPLED OUTWARD...

AND A SUN-CENTERED
OUTLOOK WOULD FUEL
FURTHER REVOLUTIONS.



THIS NEW SOURCE OF ILLUMINATION, WHAT
FRANCIS BACON CALLED "THE TORCH OF
ANALYSIS," INSPIRED A QUEST FOR REASON -

TO DISCOVER ANSWERS
TO "WHY?" AND "HOW?"

AND DISPEL FEAR
OF THE UNKNOWN.

ITS PENETRATING LIGHT PIERCED DEPTHS
PREVIOUSLY BEYOND OUR GRASP,

AS NATURE WAS ITSELF CLEAVED
INTO SEPARATE ELEMENTS

AND ITS UNDERLYING
MECHANISMS LAID BARE.

TO PROBE DEEPER AND PEER STILL FARTHER,

MORE POWERFUL INSTRUMENTS WERE BUILT.

THIS IN TURN MEANT THAT OPERATORS BECAME INCREASINGLY SPECIALIZED IN THEIR TRAINING.

AND THEN SET THEIR SIGHTS ON MORE SPECIFIC TARGETS.

THIS NARROWING OF FOCUS.

LED

TO

FRAGMENTATION -

A CASCADE OF INDIVIDUAL SEARCHLIGHTS.

DIVISIONS GREW.

BORDERS WERE ERECTED.

DISTINCT TERRITORIES WERE DRAWN UP,

DELINQUENT PROVINCES OF EXCLUSION

CLAIMS STAKED AREAS CARVED OUT

FIELDS DEFINED.

WALLED OFF WITHIN ISOLATED DOMAINS,

COMMUNICATION ACROSS BOUNDARIES WAS STIFLED.

THEY KEPT TO THEMSELVES, PURSUING SEPARATE PATHS TO UNDERSTANDING.

TO BE SURE, THESE LENSES WE'VE FASHIONED HAVE ENABLED GREAT SIGHT TO EXPAND OUR UNDERSTANDING.

YET BY RESTRICTING OUR VISION TO A NARROW RANGE OF THE SPECTRUM, THEY COLOR PERCEPTION,

LEADING US TO MISTAKE THE VIEW THROUGH THEM FOR REALITY.

RELIANCE ON A SOLITARY VANTAGE POINT FAILS TO ILLUMINATE THE WHOLE PICTURE.

A FIXED VIEWPOINT -

A SINGLE LINE OF THOUGHT -

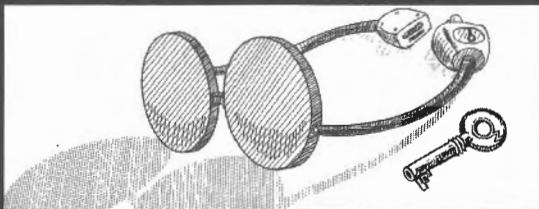
CAN BE A TRAP - WHERE WE SEE ONLY WHAT WE'RE LOOKING FOR.

BLIND TO OTHER POSSIBILITIES

IN ORDER TO SEE WHAT WE'RE NOT...

ANOTHER APPROACH IS NECESSARY.

LOOKING FROM A DIFFERENT ANGLE...



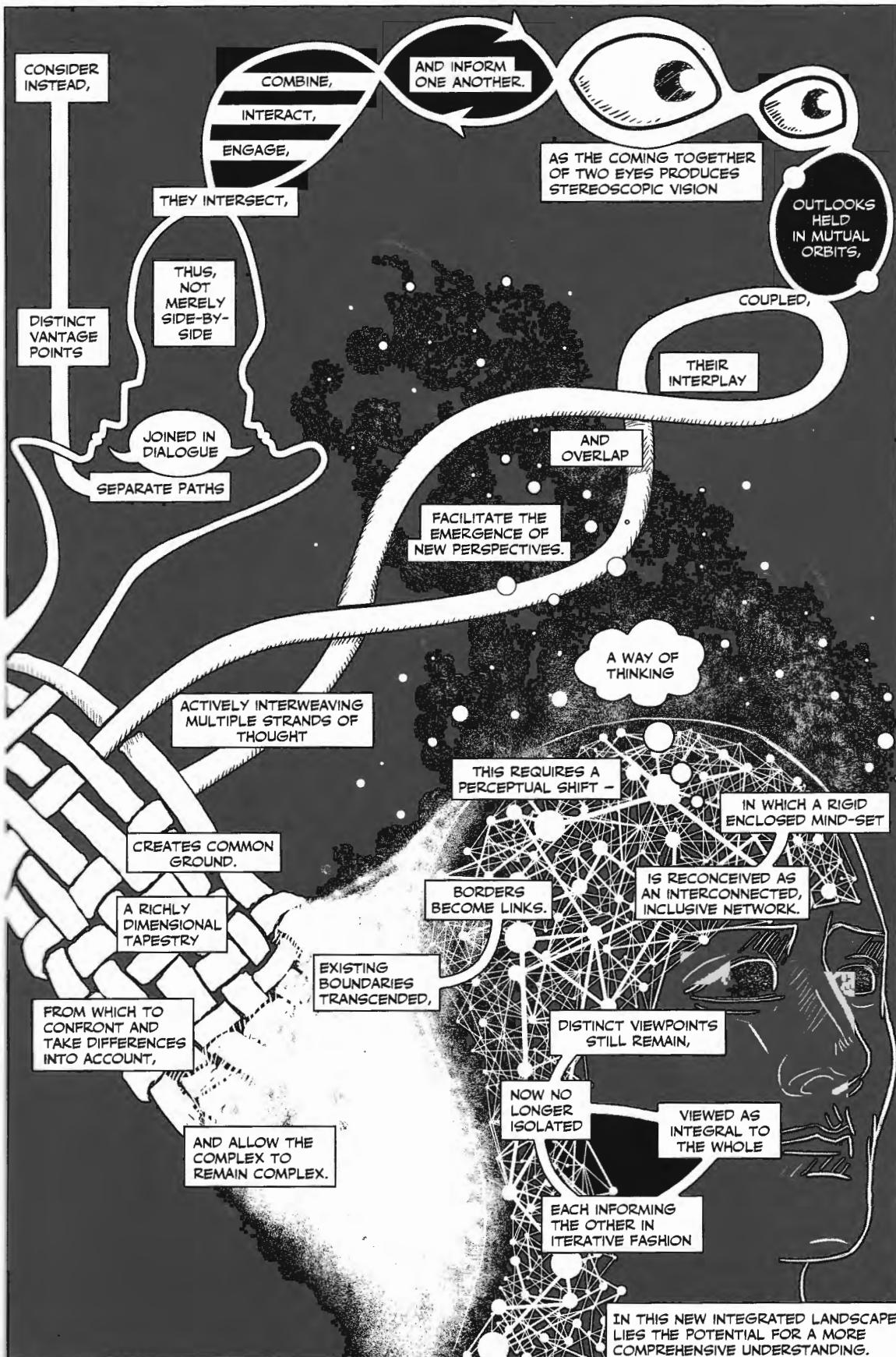
"But isn't everything here green?" asked Dorothy.

"No more than in any other city," replied Oz; "but when you wear green spectacles, why of course everything you see looks green to you."

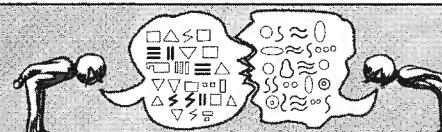
DEPRIVILEGING THIS ABSOLUTE VANTAGE POINT OPENS UP THE WORLD - THE LESSON COPERNICUS UNLEASHED REVERBERATES.

TO REVEAL THAT A SINGLE, "TRUE" PERSPECTIVE IS FALSE.

UPENDS OUR FOUNDATIONS...



THE OBSTACLE TO OPENING EXPANSIVE SPACES IS NOT THE CULTIVATION OF SEPARATE PATHS,



THAT C. P. SNOW WARNED OF IN THE TWO CULTURES, WHERE PEOPLE CAN'T TALK TO ONE ANOTHER ACROSS SUB-DIVISIONS OF THOUGHT.

RATHER IT'S A "GULF OF MUTUAL INCOMPREHENSION" ...

FOR AS WE'VE SEEN WITH ERATOSTHENES AND THE CONCEPT OF PARALLAX, DISTANCE BETWEEN AND DIFFERENCES OF VIEW ARE ESSENTIAL -

AS LONG AS CHANNELS FOR COMMUNICATION REMAIN OPEN AND ALIVE.

THESE CONTESTED SPACES IN BETWEEN ARE FERTILE BUT ILL-DEFINED. IN ORDER FOR THEM TO BEAR FRUIT, WE NEED TO RECONCEPTUALIZE DISCOURSE ACROSS THE DIVIDES.

LET US FORGO THINKING OF ARGUMENT AS WAR -

WITH OPPOSING SIDES,

WINNERS AND LOSERS.

FOLLOWING LAKOFF AND JOHNSON, IMAGINE ARGUMENT REFRAMED AS DANCE.

DUELING PARTIES BECOME COLLABORATIVE PARTNERS.

THIS DOESN'T MEAN ERASING OR IGNORING DIFFERENCES.

INSTEAD, IT'S A COMPLEX DYNAMIC, WHAT SIMEON DREYFUSS CALLS "HOLDING DIFFERENT WAYS OF KNOWING IN RELATIONSHIP."

IN RECOGNIZING THAT OUR SOLITARY STANDPOINT IS LIMITED,

WE COME TO EMBRACE ANOTHER'S VIEWPOINT AS ESSENTIAL TO OUR OWN.

LACKING ACCESS TO
"AS IT IS," WE MAKE DO
WITH "AS IT APPEARS."

EXPANDING OUR UNDERSTANDING
REQUIRES DIVERGENCE OF THOUGHT AND
DIVERSITY OF THINKERS - THE INDIVIDUAL
WAYS OF SEEING UNIQUE TO EACH OF US.

RATHER THAN ARRANGING
THIS MULTIPlicity OF
VIEWPOINTS IN TREE-LIKE,
HIERARCHICAL FASHION,

FOLLOWING DELEUZE & GUATTARI, INSTEAD
CONSIDER A DE-CENTERED, LATERALLY
BRANCHING, RHIZOMATIC STRUCTURE, WHERE
EACH NODE IS CONNECTED TO ANY OTHER.

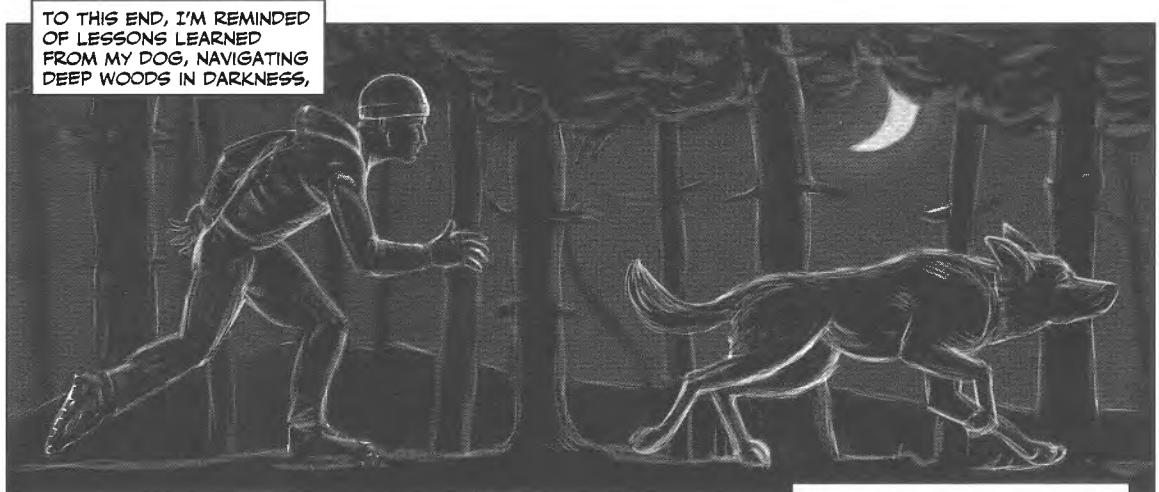
WHEN TAKEN TOGETHER,
AS BAKHTIN OBSERVED,
THESE KALEIDOSCOPIC
VIEWS OPEN "OUR OWN
MONOLITHIC AND CLOSED
WORLD" TO "THE GREAT
WORLD OF ONE'S OWN
PLUS 'THE OTHERS.'"

SEEING THROUGH ANOTHER'S EYES -
FROM WHERE THEY STAND AND
ATTENDING TO WHAT THEY ATTEND TO -

SERVES TO SHIFT OUR VISION
FROM THE ONE-DIMENSIONAL TO
A MORE MULTIDIMENSIONAL VIEW.

PERMIT ME TO PAUSE BRIEFLY HERE TO NOTE THAT WHILE THIS DISCUSSION HAS BEEN RESTRICTED TO THE VISUAL, THIS IS NOT MEANT TO EXCLUDE OTHER MODES OF PERCEPTION. RATHER IT IS INTENDED THAT OUR LITERAL WAYS OF SEEING METAPHORICALLY SERVE TO ENCOMPASS OTHER WAYS OF MAKING MEANING AND EXPERIENCING THE WORLD.

TO THIS END, I'M REMINDED OF LESSONS LEARNED FROM MY DOG, NAVIGATING DEEP WOODS IN DARKNESS,



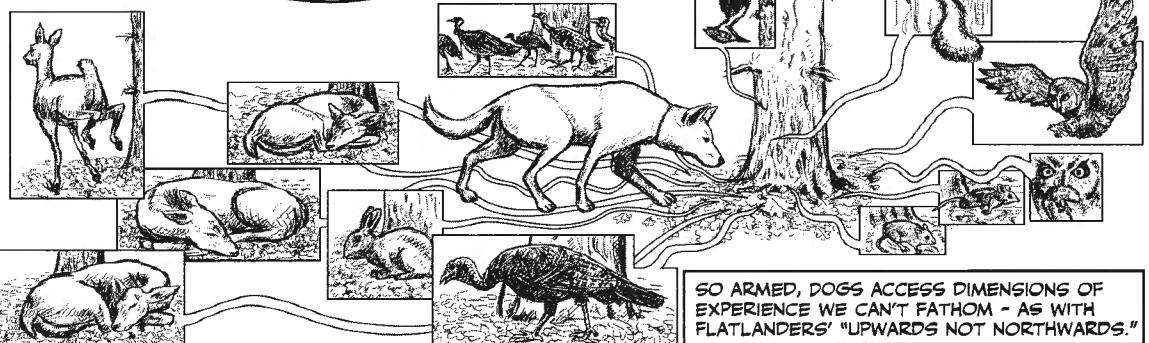
FOLLOWING HIS LEAD WHERE MY VISION FALTERED, ATTENDING TO CUES BEYOND SIGHT...

A DOG'S TOOLS OF PERCEPTION INCLUDE THE CAPACITY TO HEAR RANGES OF SOUND FAR EXCEEDING A HUMAN'S.

REFLECTIVE LENSES AMPLIFY AVAILABLE LIGHT, EQUIPPING THEM WITH A HIGH DEGREE OF NIGHT VISION.

BUT MOST SIGNIFICANT IS A DOG'S SENSE OF SMELL. FAMOUSLY PUT IN SERVICE TO DETECT BOMBS, DRUGS, AND MISSING PERSONS, THEIR NOSES FAR SURPASS MECHANICAL SUBSTITUTES.

WHERE WE OBSERVE THE SHAPE, COLOR, AND FUNCTION OF A THING, INVISIBLE SCENT SIGNATURES THAT WE'RE BLIND TO SPEAK VOLUMES TO A DOG'S NUANCED NOSE. A DOG READS EVERYTHING IT ENCOUNTERS AS A TIME CAPSULE UNFOLDING WITH RICH LAYERS OF SENSORY INFORMATION FROM WHICH TO DISCERN WHO'S BEEN HERE, WHAT TOUCHED THIS, HOW LONG AGO...



SO ARMED, DOGS ACCESS DIMENSIONS OF EXPERIENCE WE CAN'T FATHOM - AS WITH FLATLANDERS' "UPWARDS NOT NORTHWARDS."

IN PREPARATION FOR THE JOURNEY AHEAD, LET US REFLECT ON WHAT WE HAVE ENCOUNTERED.



AND FROM THOSE EXPERIENCES,
DERIVE TOOLS FOR NAVIGATION.

FIRST, CONSIDER WHAT JAMES CARSE SUGGESTS: WE UNDO BOUNDARIES THROUGH THE AWARENESS THAT "IT IS OUR VISION, AND NOT WHAT WE ARE VIEWING, THAT IS LIMITED."

CONTINUALLY SEEKING WHAT LIES BEYOND YOUR HORIZON IS CURIOSITY.

CONSTANTINE CAVAFY DESCRIBED THE QUEST TO ITHACA - A DESTINATION EVER OUT OF REACH, YET ALWAYS PROVIDING A "MARVELOUS JOURNEY" ALONG THE WAY.

after Muybridge

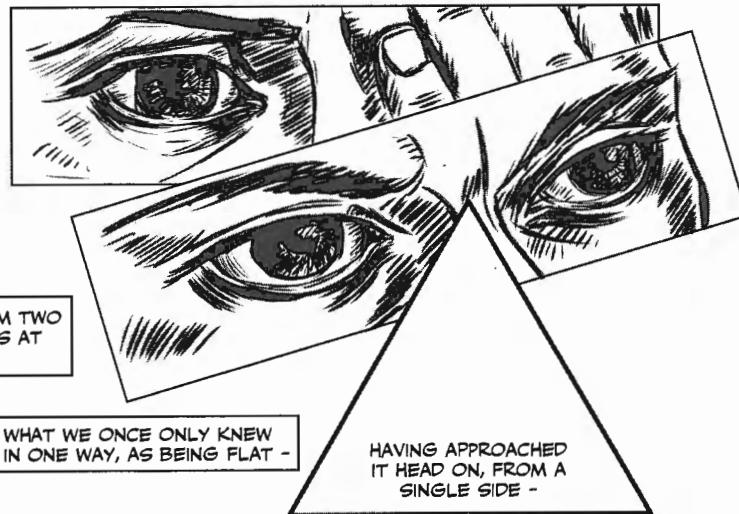
THIS RECALLS PRAGMATISM, WHICH WILLIAM JAMES DEFINES AS BEING NEVER ABOUT "CLOSING YOUR QUEST," BUT "AS A PROGRAM FOR MORE WORK" -

A MEANS FOR CHANGING EXISTING REALITIES.

THERE ARE NEVER FINAL BRICKS TO PUT IN PLACE FROM WHICH TO SEE EVERYTHING...

ONLY STEPPING STONES TOWARD WHAT'S NEXT?

PIVOTING FROM
THE CYCLOPTIC

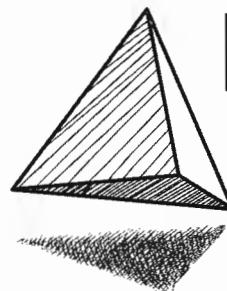
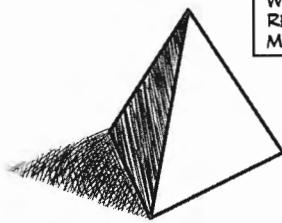


TO SEEING FROM TWO
OR MORE POINTS AT
THE SAME TIME,

WHAT WE ONCE ONLY KNEW
IN ONE WAY, AS BEING FLAT -

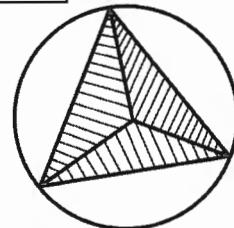
HAVING APPROACHED
IT HEAD ON, FROM A
SINGLE SIDE -

WE NOW COME TO
RECOGNIZE IN ITS
MULTI-FACETEDNESS.

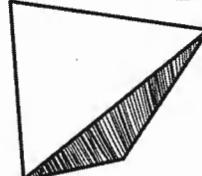


THE DIMENSIONALITY OF
OBJECTS MEANS WE CAN
MOVE AROUND THEM.

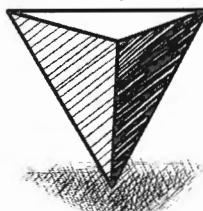
SO ERATOSTHENES SHOWED
(AND OTHERS SUBSEQUENTLY
DEMONSTRATED),



WE CAN LOOK
AGAIN FROM
OTHER SIDES,



TURN THINGS
OVER AND
UPSIDE DOWN.

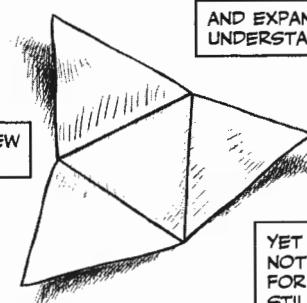


THE FOUR CORNERS
OF THE EARTH COULD
BE CIRCUMNAVIGATED.

CHANGING OUR
STANDPOINT
REVEALS UNSEEN
ASPECTS



THAT OPEN NEW
POSSIBILITIES

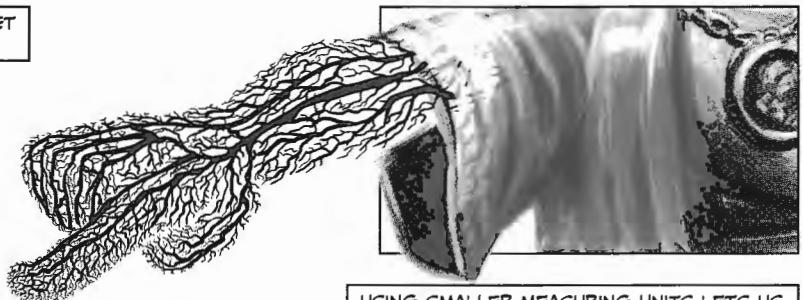


AND EXPAND OUR
UNDERSTANDING.

YET THESE TOO ARE
NOT ENDPOINTS,
FOR HIDDEN DEPTHS
STILL REMAIN...

FROM THE HORIZON OUT THERE, LET US TURN OUR ATTENTION INWARD.

TAKE AS AN EXAMPLE THE UNEXPECTED RESULTS IN MEASURING A COASTLINE'S LENGTH (IN THIS CASE ITHACA).

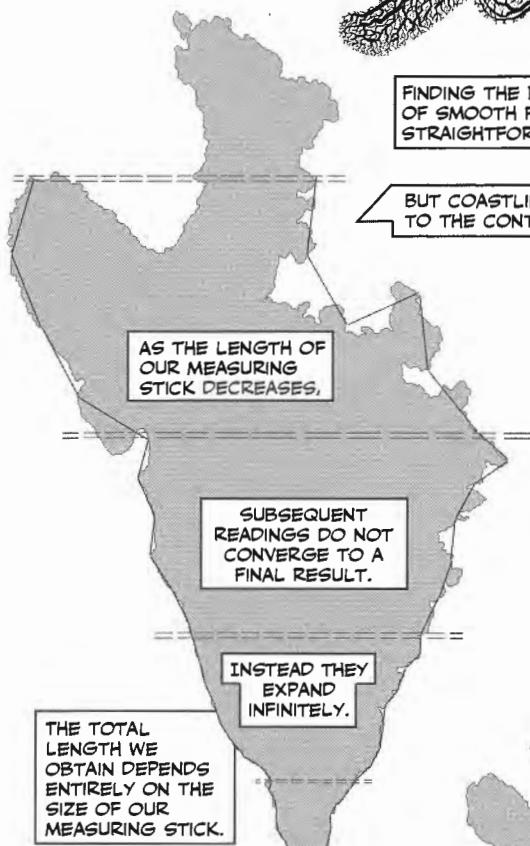


FINDING THE PERIMETER OF SMOOTH FIGURES IS STRAIGHTFORWARD,

USING SMALLER MEASURING UNITS LETS US EVENTUALLY ZERO IN ON A FIXED ANSWER.



BUT COASTLINES, TO THE CONTRARY...



AS AN ASIDE, LET'S GENERATE A SIMILAR FIGURE:

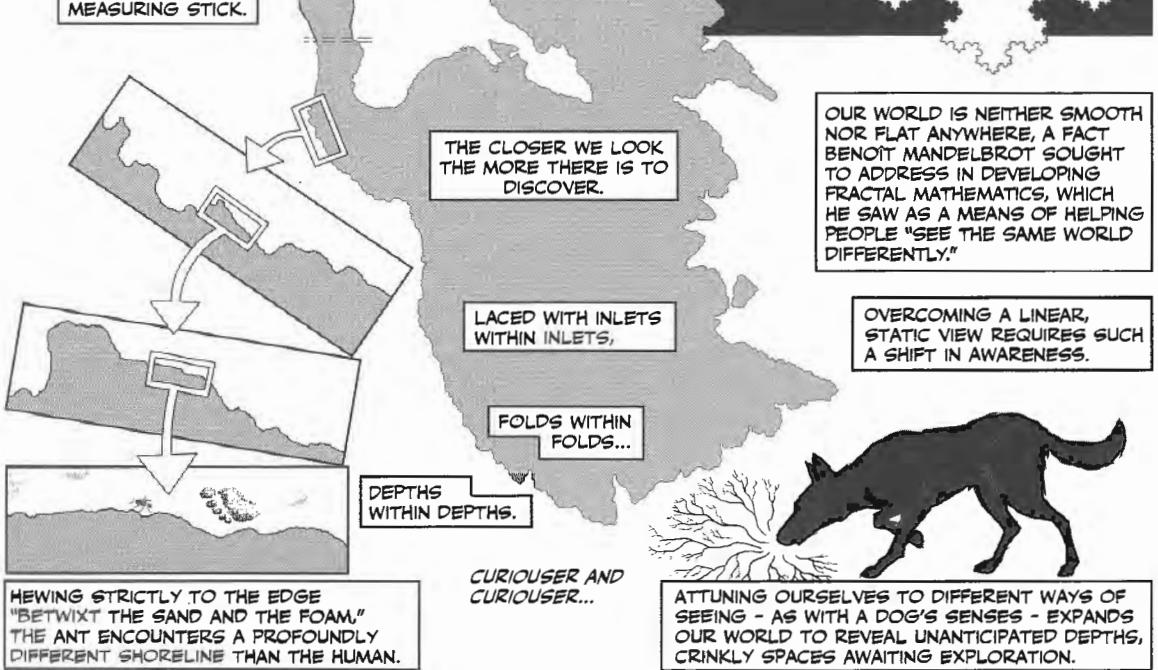
STARTING WITH A STRAIGHT LINE

REPLACE THE MIDDLE THIRD WITH A TRIANGULAR KINK.

REPEAT FOR EACH SEGMENT IN THE NEW FIGURE...

CONTINUING TO ITERATE YIELDS SOMETHING CRINKLY EVERYWHERE.

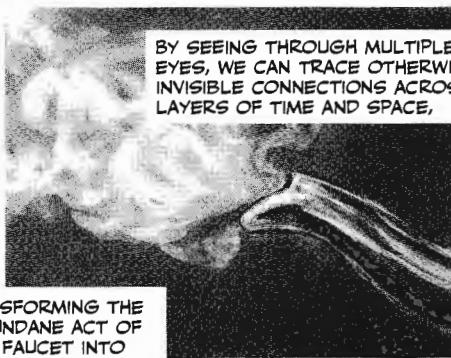
The Koch "Snowflake"



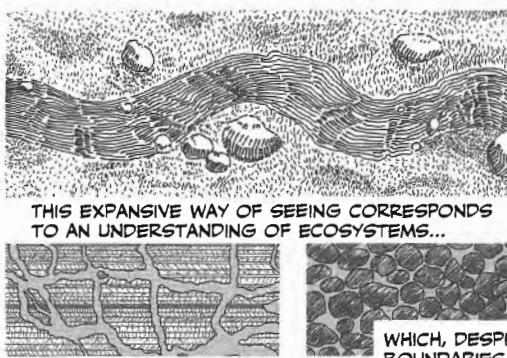
A FURTHER CRENULATION: IN ULYSSES JAMES JOYCE UTILIZED DIVERSE NARRATIVE PERSPECTIVES TO CREATE LITERARY PARALLAX.



ANSWERING:
"DID IT FLOW?"



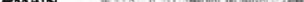
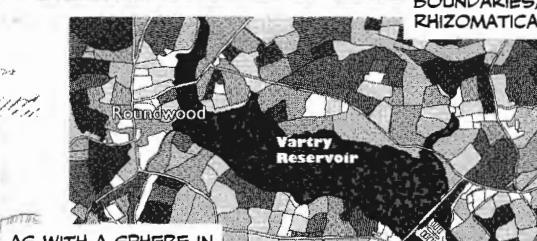
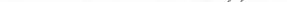
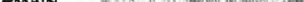
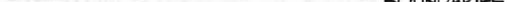
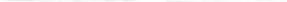
THEREBY TRANSFORMING THE SEEMINGLY MUNDANE ACT OF TURNING ON A FAUCET INTO AN ODYSSEY IN ITS OWN RIGHT.



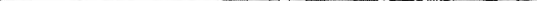
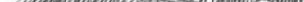
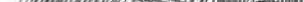
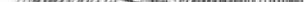
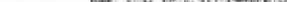
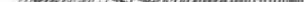
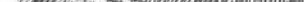
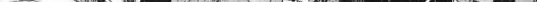
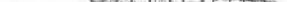
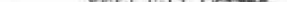
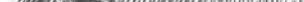
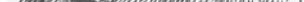
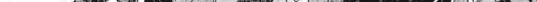
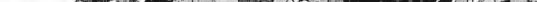
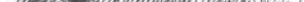
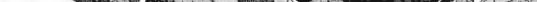
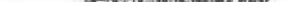
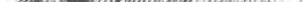
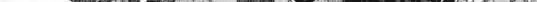
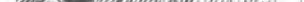
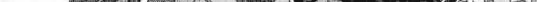
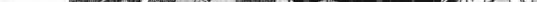
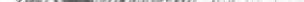
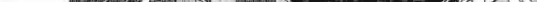
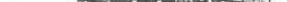
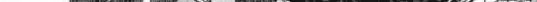
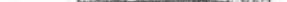
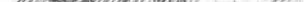
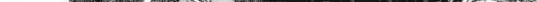
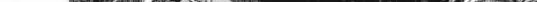
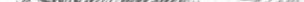
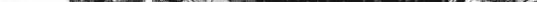
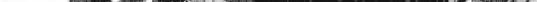
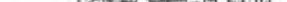
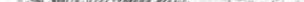
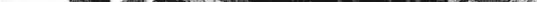
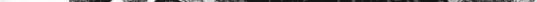
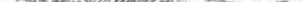
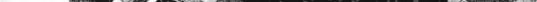
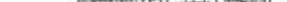
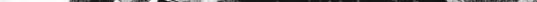
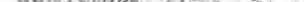
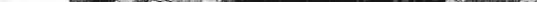
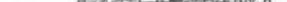
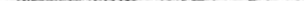
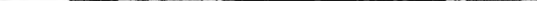
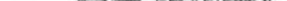
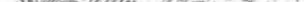
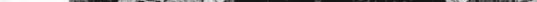
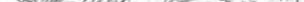
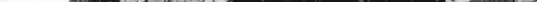
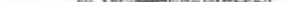
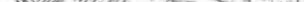
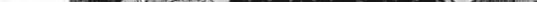
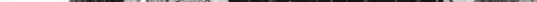
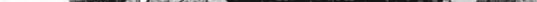
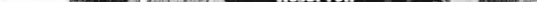
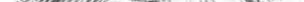
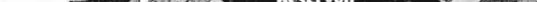
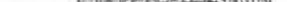
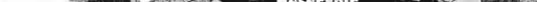
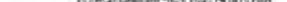
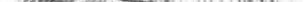
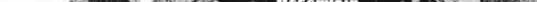
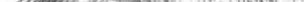
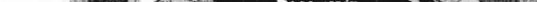
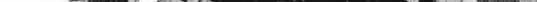
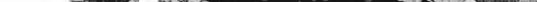
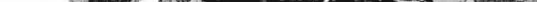
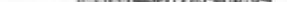
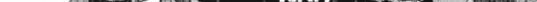
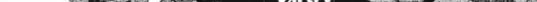
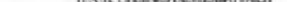
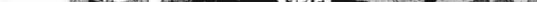
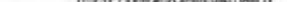
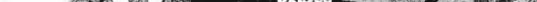
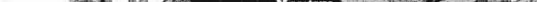
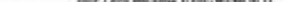
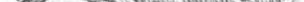
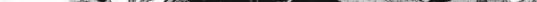
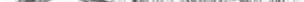
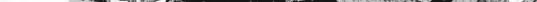
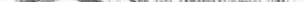
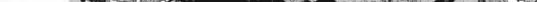
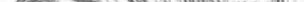
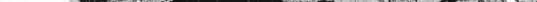
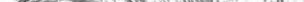
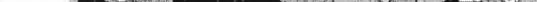
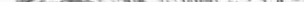
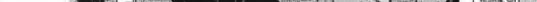
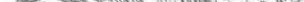
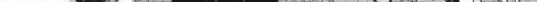
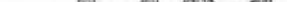
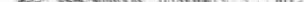
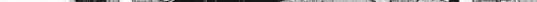
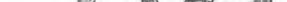
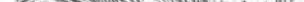
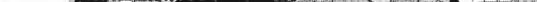
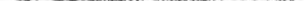
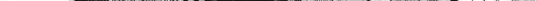
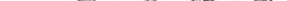
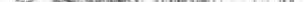
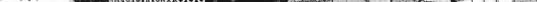
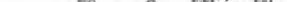
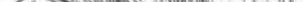
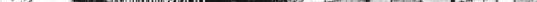
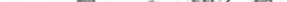
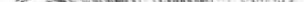
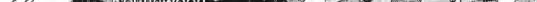
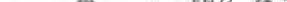
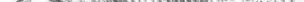
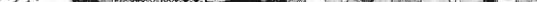
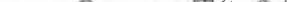
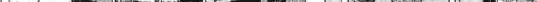
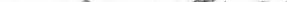
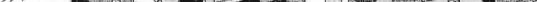
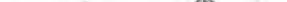
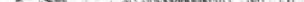
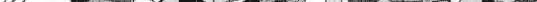
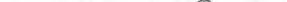
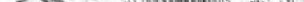
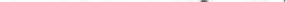
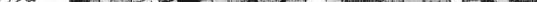
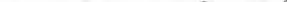
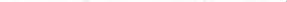
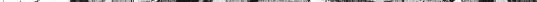
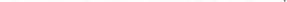
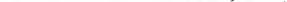
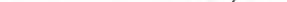
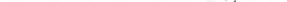
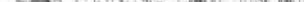
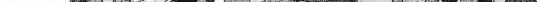
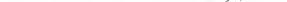
THIS EXPANSIVE WAY OF SEEING CORRESPONDS TO AN UNDERSTANDING OF ECOSYSTEMS...

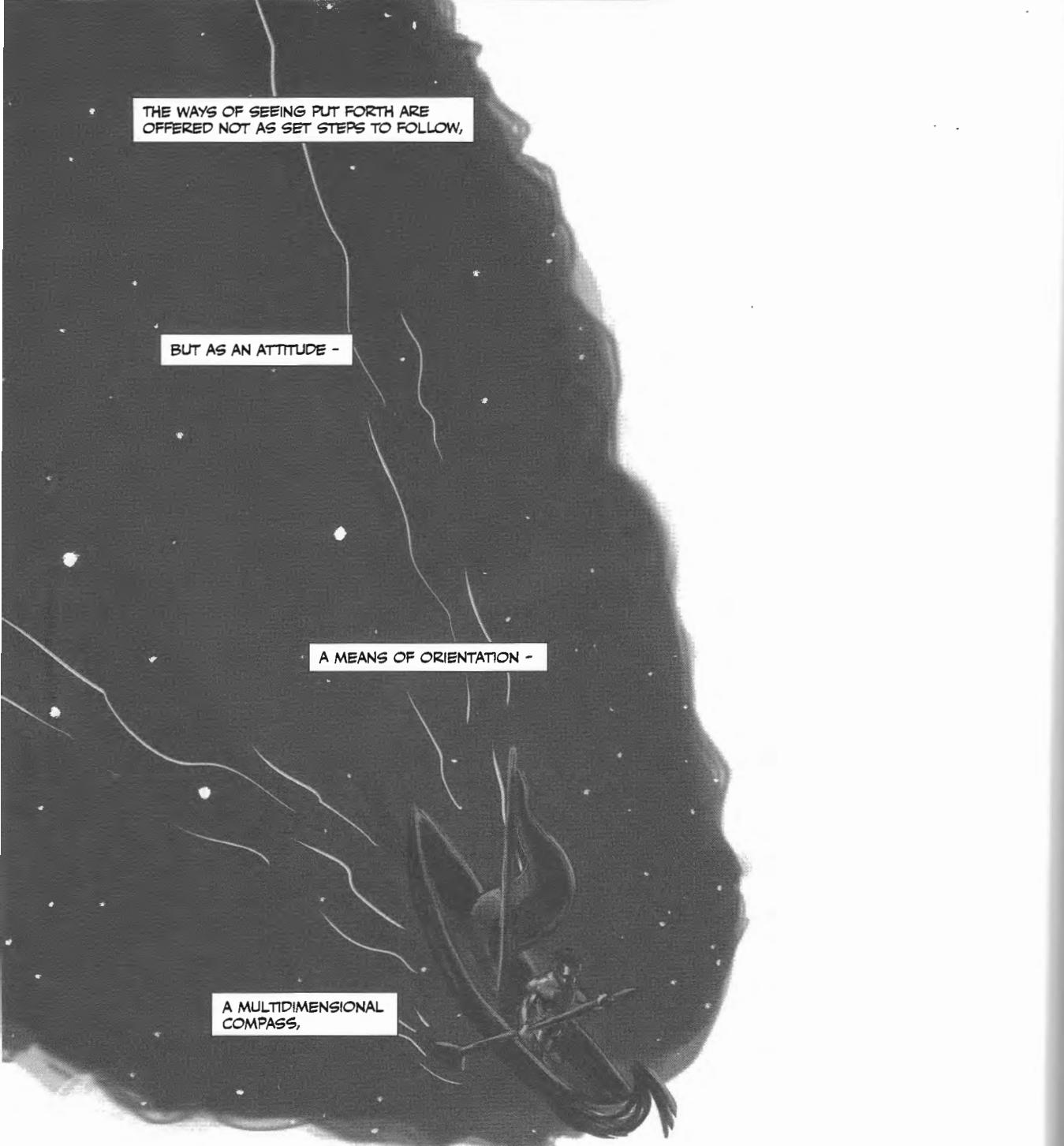


WHICH, DESPITE VISUAL BOUNDARIES, REMAIN RHIZOMATICALLY BOUND.



AS WITH A SPHERE IN FLATLAND, FROM A HIGHER DIMENSION -





THE WAYS OF SEEING PUT FORTH ARE
OFFERED NOT AS SET STEPS TO FOLLOW,

BUT AS AN ATTITUDE -

A MEANS OF ORIENTATION -

A MULTIDIMENSIONAL
COMPASS,

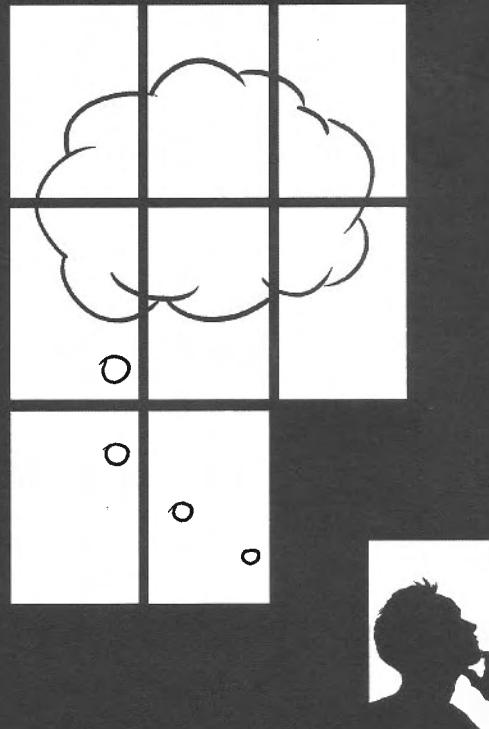
TO HELP US FIND OUR
WAY BEYOND THE
CONFINES OF "HOW IT IS,"

AND SEEK OUT NEW WAYS OF
BEING IN DIRECTIONS NOT ONLY
NORTHWARDS AND UPWARDS,

BUT OUTWARDS, INWARDS,
AND IN DIMENSIONS NOT YET
WITHIN OUR IMAGINATION...

three

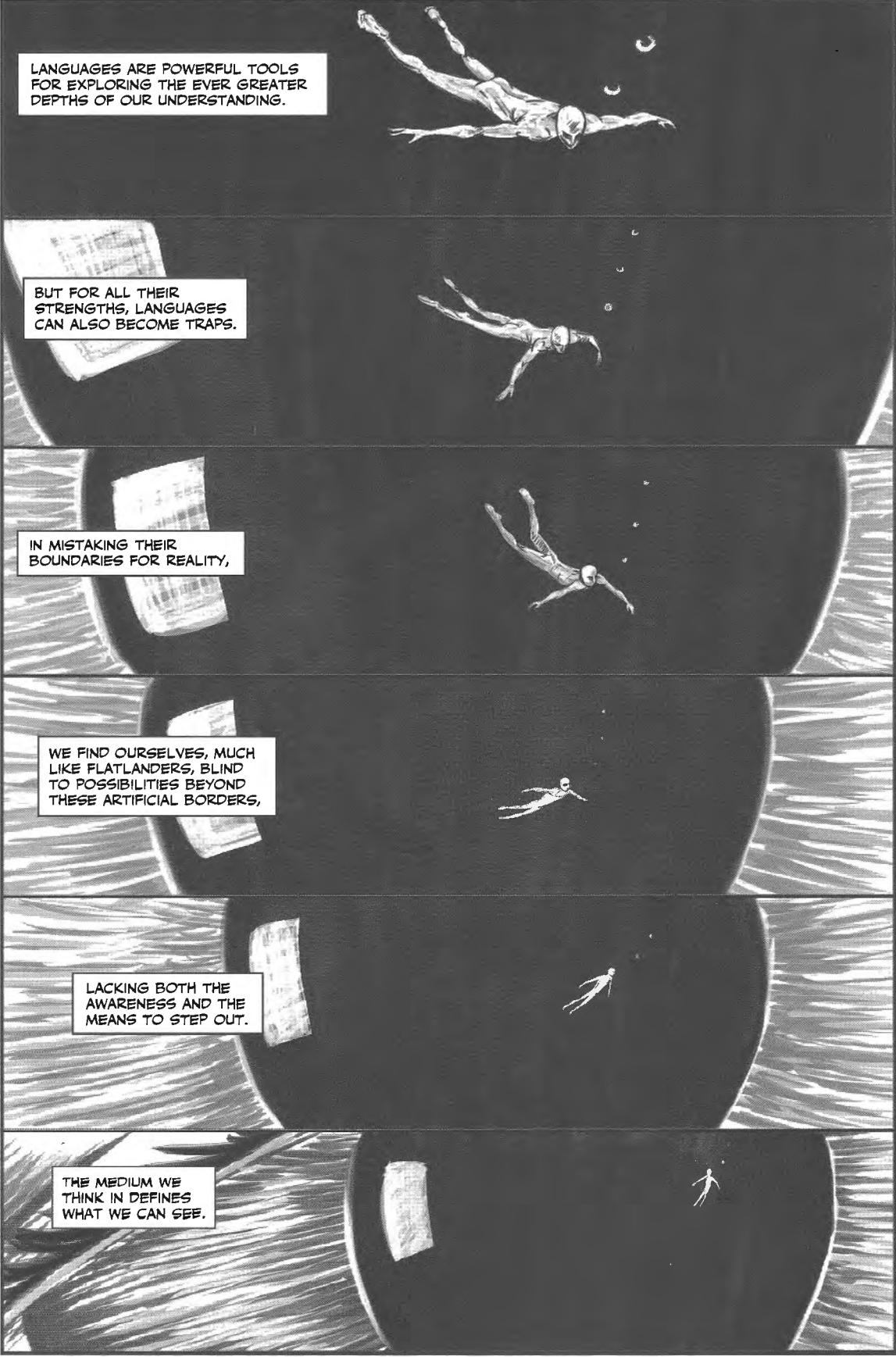
THE SHAPE OF OUR THOUGHTS



THE MEANS BY WHICH WE ORDER
EXPERIENCE AND GIVE STRUCTURE
TO OUR THOUGHTS -

OUR LANGUAGES -

ARE THE STUFF WE BREATHE
IN AND A SEA WE SWIM IN.



LANGUAGES ARE POWERFUL TOOLS
FOR EXPLORING THE EVER GREATER
DEPTHHS OF OUR UNDERSTANDING.

BUT FOR ALL THEIR
STRENGTHS, LANGUAGES
CAN ALSO BECOME TRAPS.

IN MISTAKING THEIR
BOUNDARIES FOR REALITY,

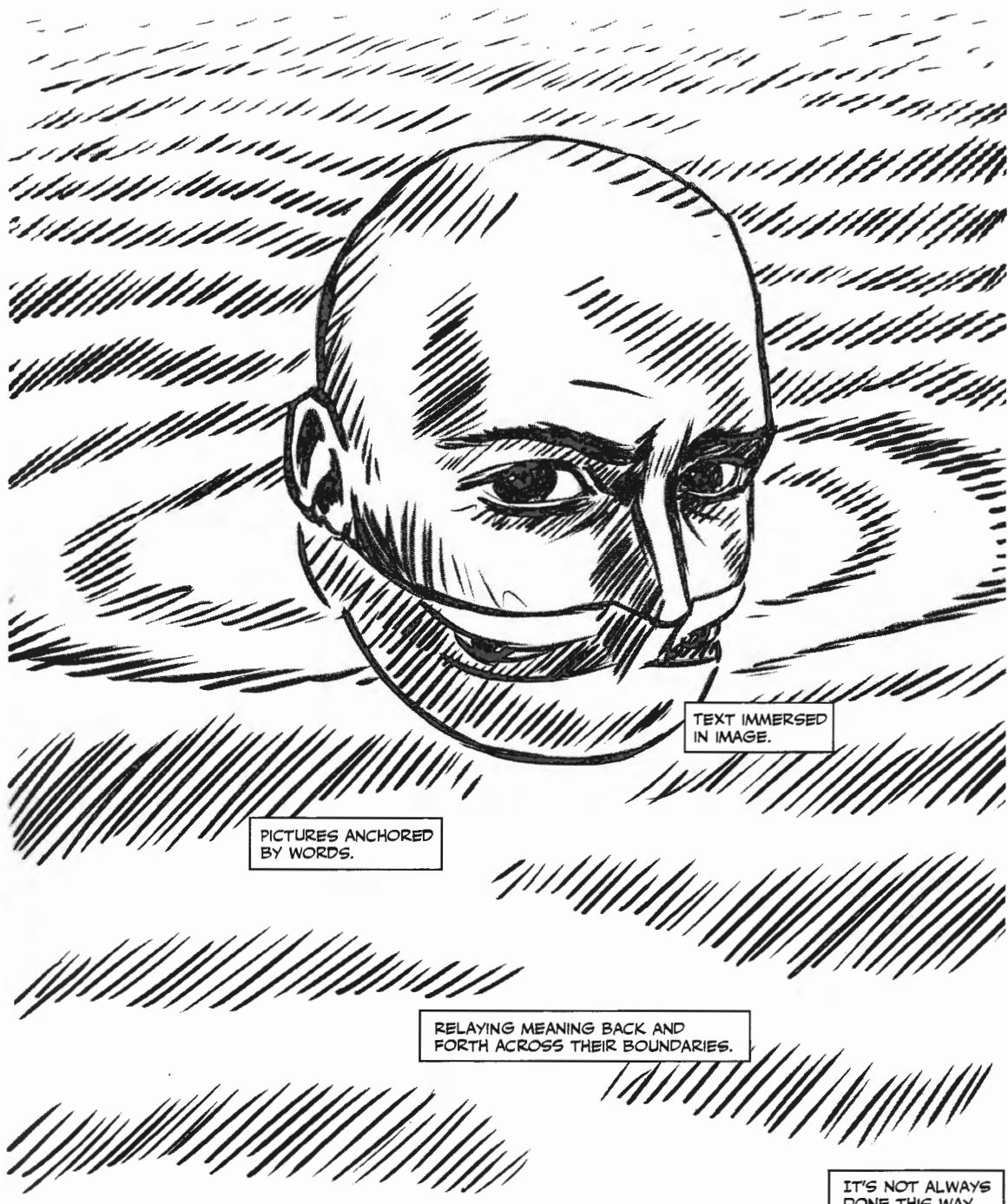
WE FIND OURSELVES, MUCH
LIKE FLATLANDERS, BLIND
TO POSSIBILITIES BEYOND
THESE ARTIFICIAL BORDERS,

LACKING BOTH THE
AWARENESS AND THE
MEANS TO STEP OUT.

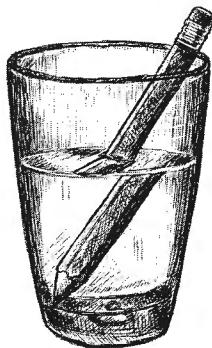
THE MEDIUM WE
THINK IN DEFINES
WHAT WE CAN SEE.

AS S. I. HAYAKAWA DESCRIBED THE SITUATION: "WE ARE THE PRISONERS OF ANCIENT ORIENTATIONS IMBEDDED IN THE LANGUAGES WE HAVE INHERITED."

WE'VE BEEN CONDUCTING THIS DISCUSSION AMPHIBIOUSLY - BREATHING IN THE WORLDS OF IMAGE AND TEXT - SEEING FROM BOTH SIDES.



Traditionally, words have been privileged as the proper mode of explanation, as *the* tool of thought. Images have, on the other hand, long been sequestered to the realm of spectacle and aesthetics, sidelined in serious discussions as mere illustration to support the text — never as



equal partner. The source of this historical bias can be traced to Plato, who professed a deep distrust of perception, citing its illusory nature: “The object which appears to bend as it enters water provokes a lively puzzlement about what is real” (Murdoch, 1977, p. 44). For Plato, human life was a pilgrimage (p. 2) from the world of appearance in the cave to the reality of pure forms — of

Fig 1. Object bent in water truth. He insisted that “we see *through* the eyes . . . not *with* them” (Jay, 1994, p. 27). If appearances were deceiving, images were far more treacherous, these “shadows of shadows,” capable of obscuring the search for truth — mistaking fire for the sun. Plato considered thinking as a kind of “inner speech” (Murdoch, p. 31). Thus, despite a similar distrust of writing as an “inferior substitute for memory and live understanding” (p. 22), he tolerated the written word as a necessary evil to convey thought.

Descartes took this distrust of the senses a step further, as he considered the possibility that all he perceived might be a deception of a supremely powerful evil spirit. His observations of wax in the presence of flame betrayed the reality that the substance remained unchanged:

But I need to realize that the perception of the wax is neither a seeing, nor a touching, nor an imagining. Nor has it ever been, even though it previously seemed so; rather it is an inspection on the part of the mind alone. This inspection can be imperfect and confused, as it was before, or clear and distinct, as it is now, depending on how closely I pay attention to the things in which the piece of wax consists. (1637/2002, p. 11)

This reasoning about wax raised questions as to how he could know anything, “all the things that had ever entered my mind were no more true than the illusions of my dreams” (p. 87). From there, Descartes proceeded with his program of radical doubt, setting out to discard and raze any “false opinions” he had come to accept in his life. By burning away all he’d come to believe, he could build up from what he knew with certainty.

WIELDING THE SHARP IMPLEMENT OF UNRELENTING SKEPTICISM,

DESCARTES SOUGHT TO PIERCE THE ILLUSORY VEIL OF THE BODY,

WHICH HE BELIEVED CONCEALED THE "WHEELS AND SPRINGS" OF CLOCK-LIKE AUTOMATA THAT MADE US TICK.

BY REDUCING THE BODY TO PARTS, HE FELT HE WOULD ARRIVE AT THE MIND, WHICH HE SAW AS BEING "ENTIRELY INDIVISIBLE."

For since I now know that even bodies are not, properly speaking, perceived by the senses or by the faculty of imagination, but by the intellect alone, and that they are not perceived through their being touched or seen, but only through their being understood, I manifestly know that nothing can be perceived more easily and more evidently than my own mind.

"I AM THINKING, THEREFORE I EXIST." FOR DESCARTES, THINKING WAS EVERYTHING AND THINKING MEANT WORDS - INNER SPEECH.

THROUGH THIS DISSECTION, MIND WAS DIVORCED FROM THE SENSES...

LEAVING US DISEMBODIED...

AFLOAT IN A SEA OF WORDS.

YET DESCARTES WAS AT ODDS WITH HIS OWN VIEWS, STATING: "ALL THE CONDUCT OF OUR LIVES DEPENDS ON OUR SENSES." OF THOSE, HE CONSIDERED SIGHT "THE MOST NOBLE."

WHILE MOUNTING AN ATTACK ON THE SENSES, DESCARTES WAS SIMULTANEOUSLY INVESTIGATING OPTIC PHENOMENA.

AND HE SAW GREAT PROMISE IN THE RECENT INVENTIONS EXTENDING VISION'S REACH AND STUDIES OF THE EYE'S INNER WORKINGS.

DESCARTES PUT FORTH AN EXPLANATION OF REFRACTION - THE WAY IN WHICH LIGHT (OR ANY WAVE) BENDS WHEN MOVING BETWEEN DIFFERENT MEDIUMS.

THIS CHANGE IN DIRECTION IS TOWARD THE PERPENDICULAR WHEN ENTERING SLOWER MATERIALS...

AND AWAY FROM IT UPON EXITING (OR ENTERING A FASTER MEDIUM).

WITH REFRACTION, HE COULD DESCRIBE RAINBOWS.

IN EACH DROP LIGHT IS BENT...

*DIFFERENT WAVELENGTHS OF LIGHT REFRACT TO DIFFERENT DEGREES

BLUE MORE THAN RED.*

THUS, WE SEE RED AROUND THE OUTSIDE.

(IN EVERY DIRECTION)

RED EXITS AT A STEEPER ANGLE.

REFLECTS

BENDS AGAIN

Blue Red

WITH THIS UNDERSTANDING, WE CAN REVISIT PLATO'S WATER-BENT OBJECT.



OVERHEAD VIEW

LIGHT REFRACTS

APPEARS TO HAVE COME FROM HERE.

THE "ILLUSION" HAS MUCH TO TELL US IF WE KNOW HOW TO LISTEN.

RATHER THAN BEING CAUSE TO DISMISS SENSE EXPERIENCE,

THESE "BENDS" IN APPEARANCE INSTEAD POINT OUT THAT IT IS THROUGH THE COUPLING OF BOTH

REASON AND PERCEPTION

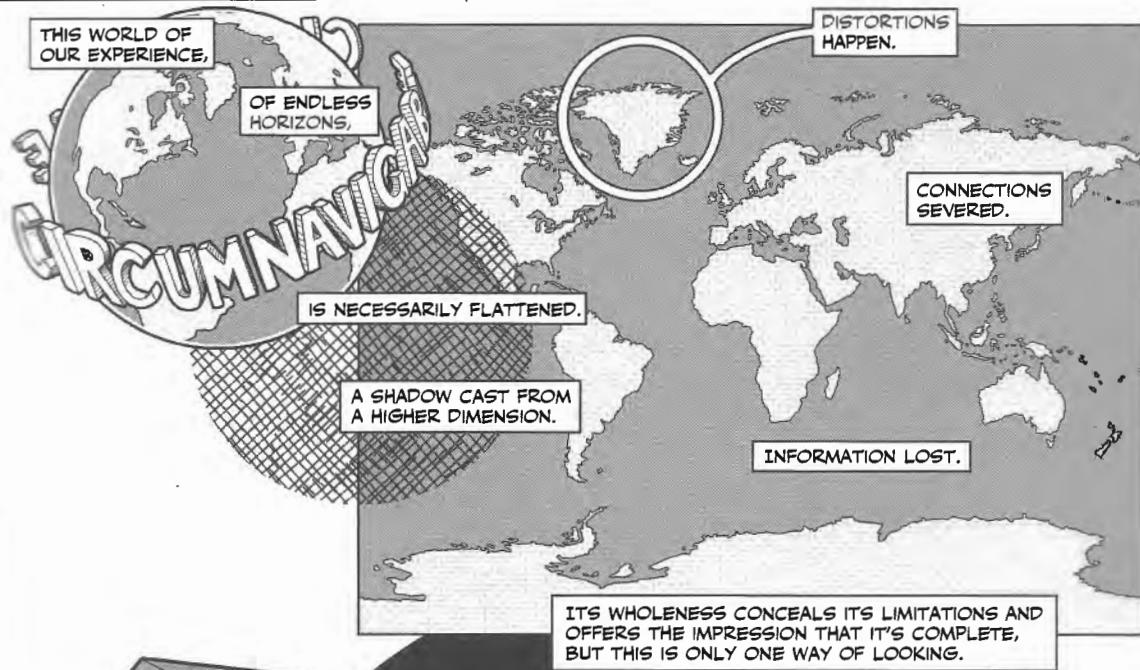
- NOT ONE OR THE OTHER IN ISOLATION - THAT WE CAN DISCERN GLIMPSES OF THE UNDERLYING PHENOMENA AT WORK.

CONSIDER THEN, THIS INTERPLAY BETWEEN VISUAL AND VERBAL MEDIUMS WE'VE BEEN PERFORMING AS

A KIND OF REFRACTION

THAT SIMILARLY SERVES TO EXPAND OUR VIEW BY REVEALING BOUNDARIES ENACTED BY A SINGLE MODE.

WHEN REPRESENTED THROUGH
ANY SINGLE MODE,



CHANGING ORIENTATION PUTS FORTH
A DECIDEDLY DIFFERENT WORLD VIEW.

BUCKMINSTER FULLER'S
"Dymaxion Map"
PROJECTS THE GLOBE
INTO AN ICOSAHEDRON
BEFORE UNFOLDING IT.)

THUS RECAST, CONNECTIONS
ARE EMPHASIZED IN PLACE
OF OPPOSITIONS.

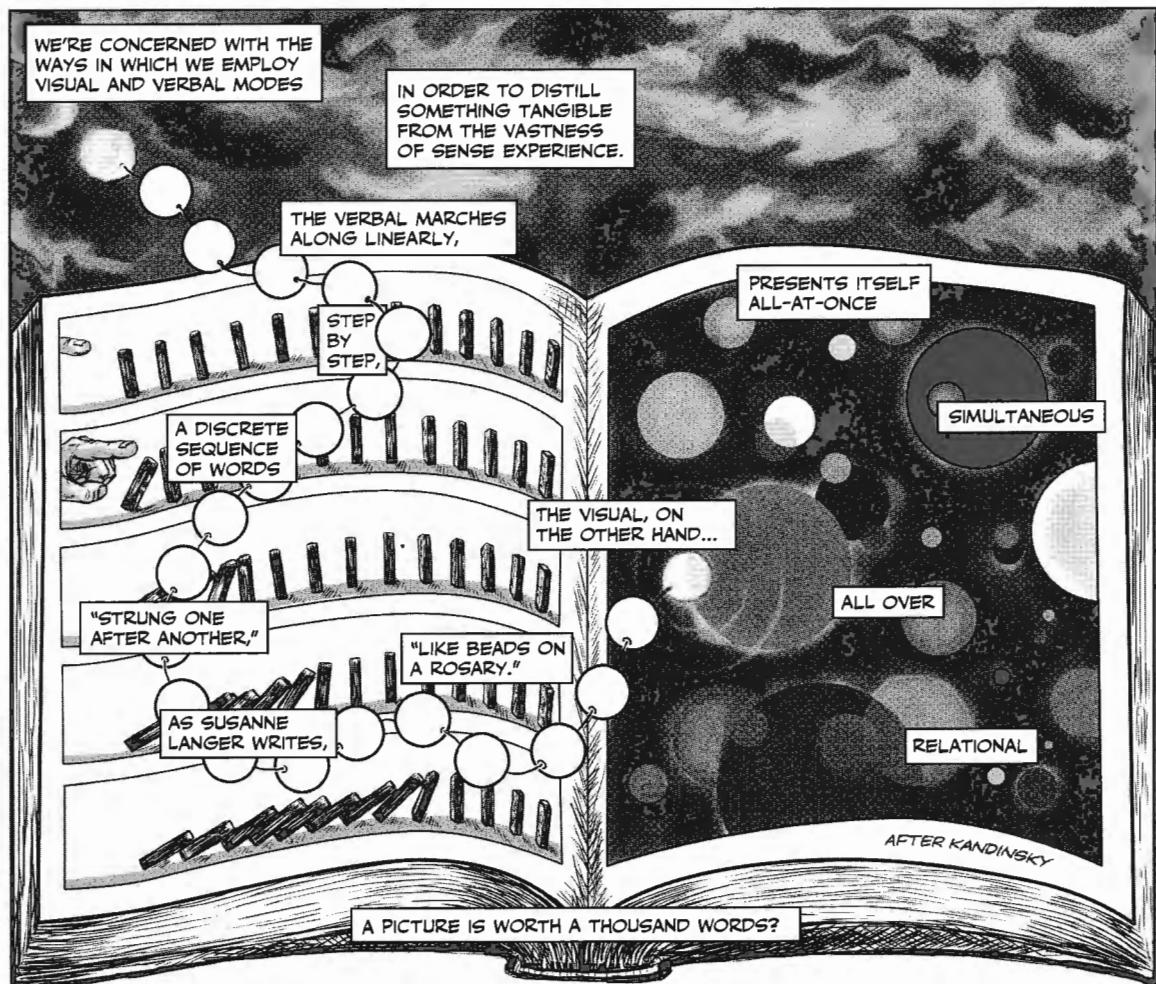
IN SELECTING FOR WHAT IT PRESENTS,
EACH MODE EXCLUDES WHAT IT DOES NOT.

NOT EVEN THE MOST EXPANSIVE MAPPING CAN CONVEY EVERYTHING. JUST
AS THE THERMOMETER PROVIDES BUT A PARTIAL VIEW OF THE WEATHER,

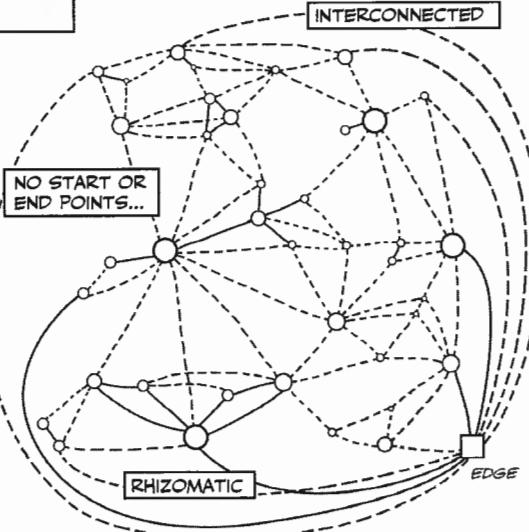
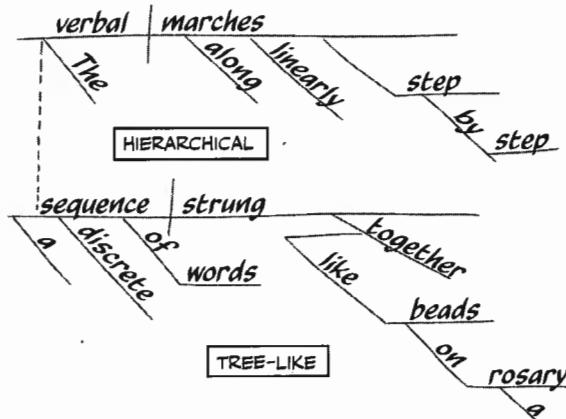


EVERY LANGUAGE,
HAYAKAWA SUGGESTS,
"LEAVES WORK
UNDONE FOR OTHER
LANGUAGES TO DO."





PERHAPS, BUT BECAUSE OF THEIR DISTINCT STRUCTURES, THERE IS NO DIRECT CORRESPONDENCE BETWEEN THEM.



A DESCRIPTION OF AN IMAGE NEVER ACTUALLY REPRESENTS THE IMAGE. RATHER, AS MICHAEL BAXANDALL OBSERVES, IT IS A REPRESENTATION OF THINKING ABOUT HAVING SEEN A PICTURE - IT'S ALREADY FORMULATED IN ITS OWN TERMS.

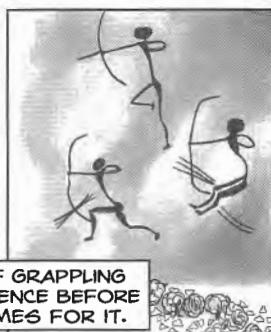
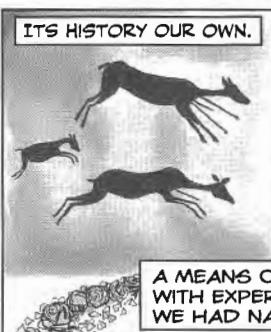
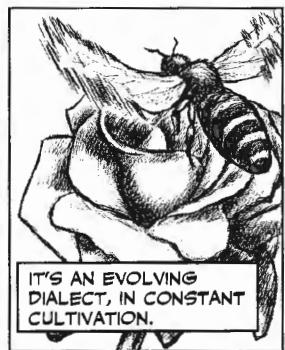
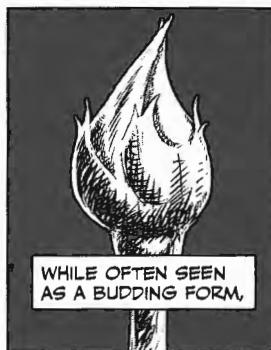
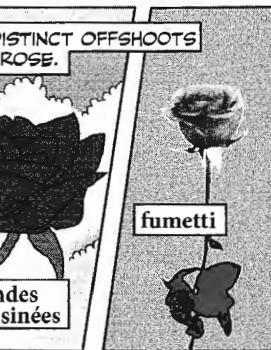
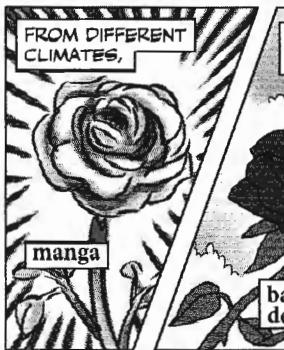
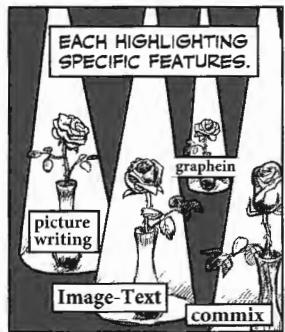
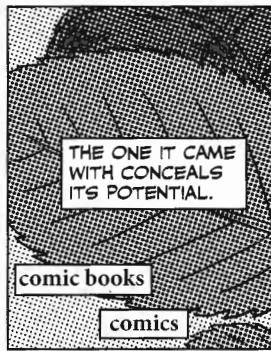
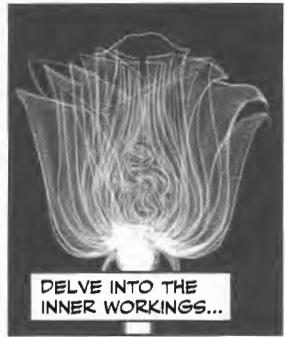
WHILE IMAGE IS, TEXT IS ALWAYS ABOUT.

IN RELYING ON TEXT AS THE PRIMARY MEANS OF FORMULATING UNDERSTANDING, WHAT STANDS OUTSIDE ITS LINEAR STRUCTURE IS DISMISSED.

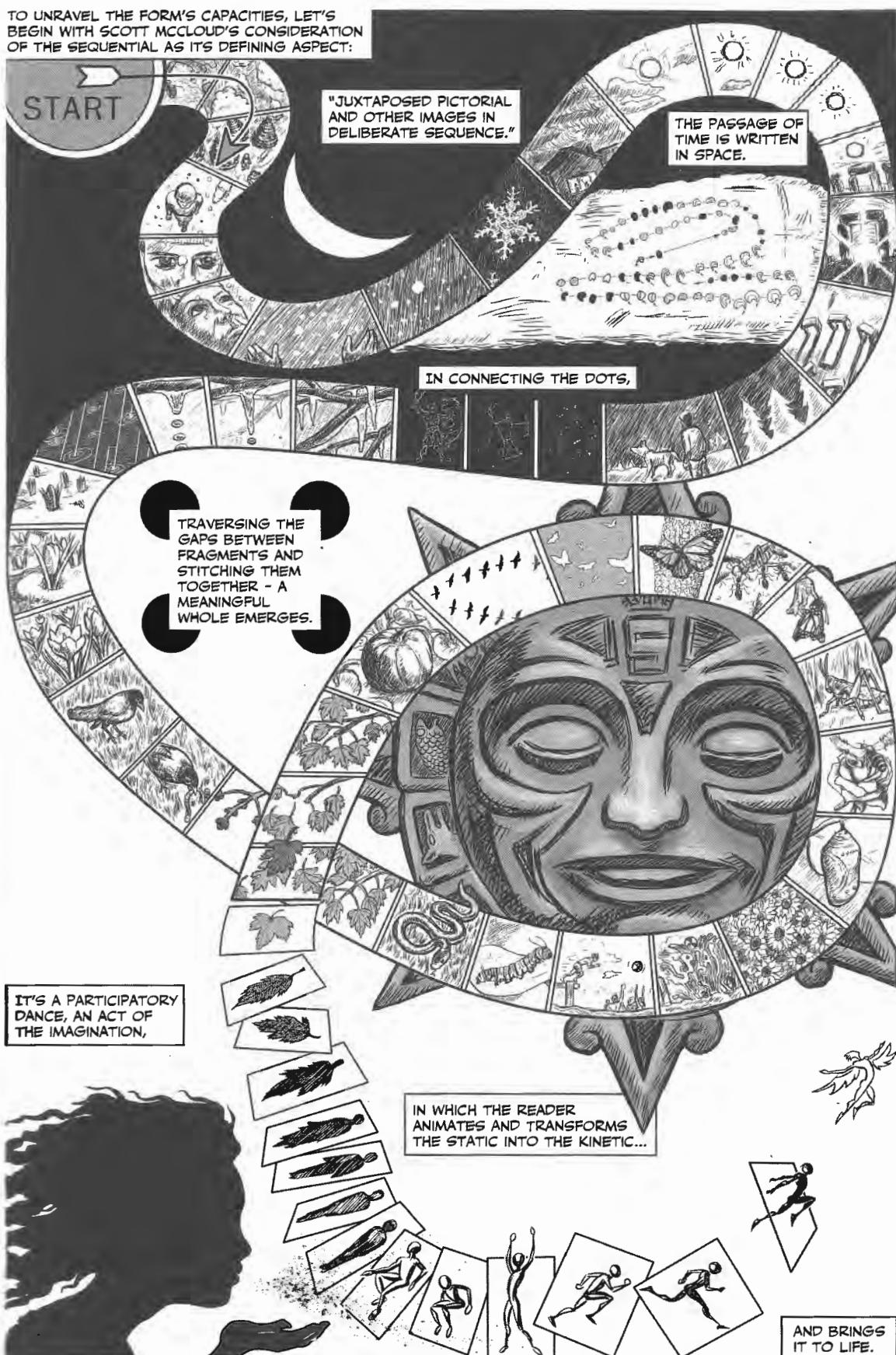
THE VISUAL PROVIDES
EXPRESSION WHERE
WORDS FAIL.

WHAT HAVE WE BEEN MISSING?

AND WHAT CAN BE MADE VISIBLE WHEN WE WORK IN A FORM THAT IS NOT ONLY ABOUT, BUT IS ALSO THE THING ITSELF.



TO UNRAVEL THE FORM'S CAPACITIES, LET'S BEGIN WITH SCOTT MCCLOUD'S CONSIDERATION OF THE SEQUENTIAL AS ITS DEFINING ASPECT:





THESE TWO DISTINCT KINDS OF AWARENESS - THE SEQUENTIAL AND SIMULTANEOUS - CORRESPOND WITH IAIN MCGILCHRIST'S CHARACTERIZATION OF THE LEFT AND RIGHT HEMISPHERES OF THE BRAIN.

MCGILCHRIST DISMISSES THE LONG-HELD VIEW OF NEATLY MAPPING LEFT TO THE VERBAL AND RIGHT TO VISUAL, PROPOSING INSTEAD THAT THE HEMISPHERES ARE FUNDAMENTALLY DIFFERENT WAYS OF ATTENDING TO THE WORLD:

THE LEFT BREAKS DOWN AND ISOLATES INFORMATION INTO SEGMENTED PARTS AND THE RIGHT ADDRESSES THE WHOLE IN ITS CONTEXT.

EVOLUTIONARILY SPEAKING, THERE IS A GREAT ADVANTAGE IN BEING ABLE TO BRING TWO DISTINCT TYPES OF ATTENTION TO BEAR AT THE SAME TIME.

WHILE THE LEFT IS DIRECTED INWARD, NARROWLY FOCUSED ON MATTERS IMMEDIATELY AT HAND, THE RIGHT REMAINS OPEN, OUTWARDLY DIRECTED, AND BROADLY ALERT - ESSENTIAL TO AVOID BEING EATEN!

THE VERY FABRIC OF OUR EXPERIENCE EMERGES FROM THE INTERACTION AND INTEGRATION OF EACH HEMISPHERE'S SEPARATE MEANS OF PERCEIVING -

THESE DIFFERENT WAYS OF KNOWING HELD IN RELATIONSHIP AT ONE TIME.

SIMILARLY,

COMICS HOLD SEQUENTIAL AND SIMULTANEOUS MODES IN ELECTRIC TENSION,

EMBEDDED WITHIN THE SEQUENTIAL-SIMULTANEOUS ECOSYSTEM THAT IS COMICS,

He was an old man who fished alone in a skiff in the Gulf Stream and he had gone eighty-four days now without taking a fish. In the first forty days a boy had been with him.

But after forty days without a fish the boy's parents had told him that the old man was now definitely and finally salao, which is the worst form of unlucky and boy had gone a

WORDS AND PICTURES, LONG KEPT APART, ARE ALLOWED TO COHABIT.

JOINED IN RELATIONSHIP, VISUAL AND VERBAL INTERMINGLE...

DESCRIPTION

DEPICTION

after Botticelli

TEXT
BECOMES AN INTEGRAL ELEMENT OF THE COMPOSITION.

INTERPENETRATE

INTERANIMATE

REFRACTION BETWEEN MODES,

GENERATES A KIND OF MULTIPLICATIVE RESONANCE - A DYNAMIC CYCLE OF READ=LOOK, LOOK=READ...

INTERDEPENDENT

INEXTRICABLE

EQUAL PARTNERS IN THIS UNION,

EACH INFORMS AND ENRICHES THE OTHER TO ACHIEVE A MEANING, AS R. C. HARVEY SAYS, "THAT NEITHER CONVEYS ALONE WITHOUT THE OTHER."

DAVID LEWIS CALLS IMAGE-TEXT INTERACTION A "DOUBLE ORIENTATION" - A "LOOKING IN MORE THAN ONE DIRECTION AT THE SAME TIME."

EQUALLY FITTING FOR OUR PURPOSES: EDWARD TUFTE'S DESCRIPTION OF THIS INTEGRATION OF WORDS AND PICTURES IN WHICH THEY ACT AS ONE, AS BEING ESSENTIAL FOR "ESCAPING FLATLANDS" OF INFORMATION EXCHANGE...

TO PLUMB GREATER DEPTHS OF DISCOURSE.

WORDS,
AS WE'VE COME TO SEE,
ARE NOT THE SOLE VEHICLE
FOR COMMUNICATING
THOUGHT.

FOR LIKE THE
THERMOMETER,



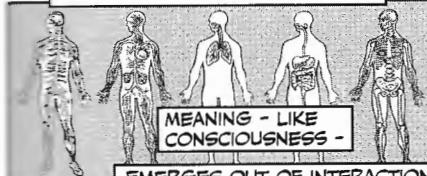
ANY SINGLE
MODE ONLY
PROVIDES A
PARTIAL VIEW.

Descartes took this distrust of the body a step further, as he considered the body to be nothing but a machine that all he perceived must be the result of a supremely powerful will. His observations of wax in the 1630s were the first to demonstrate that

THE MANY POSSIBLE
PATHS BY WHICH WE
MAKE MEANING



ARE AS VARIED AS THE SYSTEMS
THAT MAKE US WHO WE ARE.



EMERGES OUT OF INTERACTION
AMONG ALL THE ELEMENTS.

COMICS, BEYOND UNITING TEXT AND IMAGE, ALLOW FOR THE INTEGRATION AND INCORPORATION OF MULTIPLE MODES AND SIGNS AND SYMBOLS -

OUTSIDE THE SCOPE OF WHAT NELSON GOODMAN IDENTIFIES AS NOTATIONAL SYSTEMS AND REPRESENTATIONAL IMAGERY.

THIS MAKES FOR AN
EXPANSIVE PALETTE -

A MOSAIC, AS PERRY NODELMAN
CALLS IT, COMPOSED OF
SEPARATE ELEMENTS,

ORCHESTRATED,

NOT ONE-AT-A-TIME,

RATHER,
SPATIALLY
ENTWINED,

MULTIPLE LAYERS ARE
CONVEYED IN UNISON.

EACH RETAINING ITS
DISTINCT IDENTITY,
WHILE CONTRIBUTING
TO THE WHOLE.

THROUGH THEIR
VERY ARRANGEMENT,

THESE ASPECTS
COME TOGETHER IN
MUTUALLY AFFECTING
RELATIONSHIPS...

TO PRODUCE
A SYMPHONY.

OVER THE COURSE
OF THIS CHAPTER,

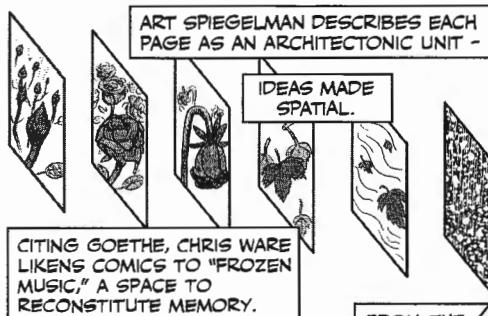
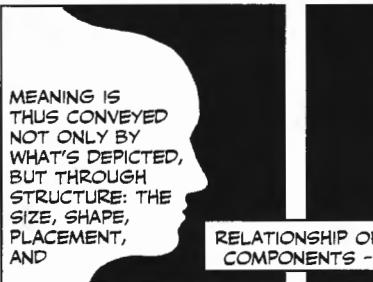
WE'VE SOUGHT TO
RECONSIDER HOW WE
ORDER EXPERIENCE
AND GIVE SHAPE TO
OUR THOUGHTS.

LINEAR SEQUENCES
OF ROWS

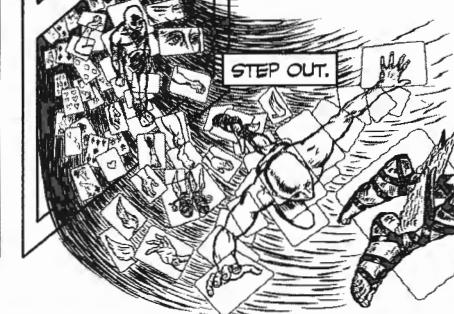
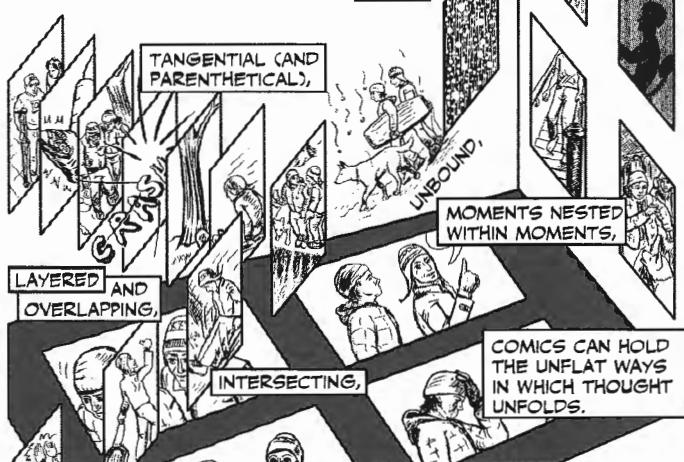
HAVE THEIR STRENGTHS BUT

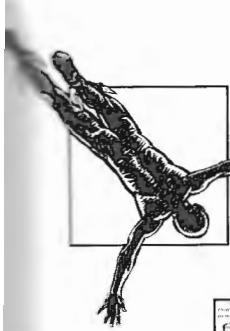
THEY ARE NOT THE
ONLY POSSIBILITY.

WHEN WE TAKE THE ALL-OVER
COMPOSITION INTO ACCOUNT



THROUGH ITS
MULTIPARTY OF
APPROACHES FOR
CONSTITUTING
EXPERIENCE, THIS
FORM CAN PROVIDE
AN ELEVATED
PERSPECTIVE FROM
WHICH TO
ILLUMINATE THE
TRAPS OF OUR OWN
MAKING AND OFFER
A MEANS TO...

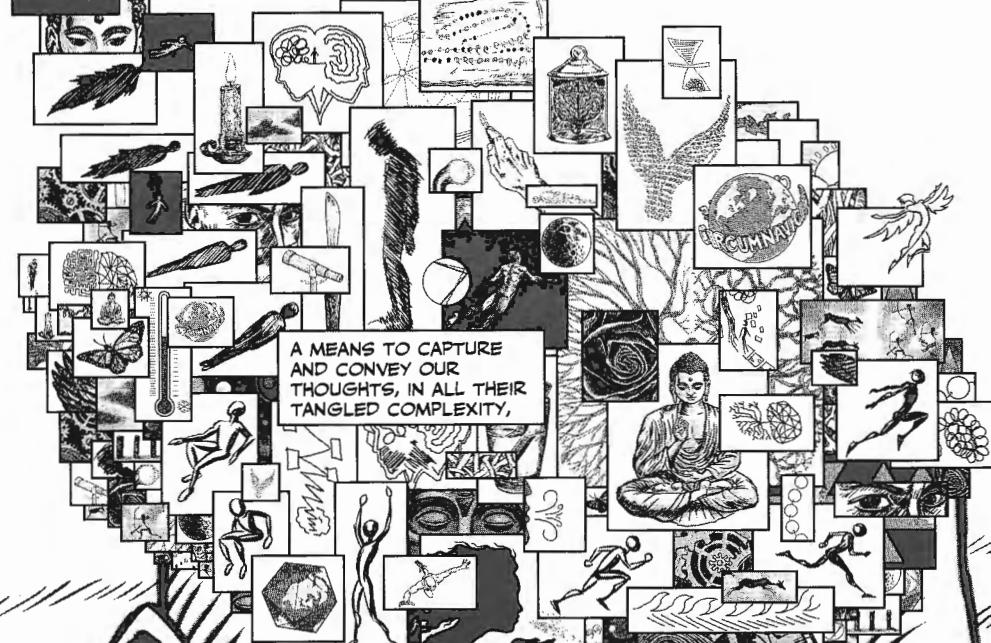




FROM THIS VANTAGE POINT
OUTSIDE THE BOUNDARIES
OF A SINGLE MODE,



LET US TAKE UP BERTRAND RUSSELL'S REGRET (AS
STATED BY SUSANNE LANGER) THAT "WE CANNOT
CONSTRUCT A LANGUAGE WHICH WOULD EXPRESS ALL
RELATIONS BY ANALOGOUS RELATIONS; THEN WE
WOULD NOT BE TEMPTED TO MISCONSTRUE LANGUAGE."



PERHAPS, IN COMICS, THIS AMPHIBIOUS
LANGUAGE OF JUXTAPOSITIONS AND
FRAGMENTS - WE HAVE SUCH A FORM.



A MEANS TO CAPTURE
AND CONVEY OUR
THOUGHTS, IN ALL THEIR
TANGLED COMPLEXITY,

AND A VEHICLE WELL-SUITED
FOR EXPLORATIONS TO COME.

four

OUR BODIES IN MOTION



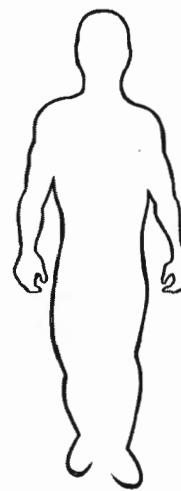
THE IMAGE-TEXT DIVIDE...

BREACHED,

WE NOW INTRODUCE ANOTHER
DIMENSION TO OUR THINKING...



AND SET FORTH OVER
AN EXPANSIVE HORIZON,



COMPLETE WITH ITS OWN
FORMS FOR EXPRESSION
AND MEANS OF DISCOVERY.

RUDOLF ARNHEIM SAYS THAT "TO SEE MEANS TO SEE IN RELATION."

FROM THE RELATIONSHIP BETWEEN THE SEPARATE VIEWS FROM EACH EYE

TO HOW THE MOVEMENT OF OUR HEAD AND BODIES ALTERS OUR RELATIONSHIP TO OUR ENVIRONMENT,

PERCEPTION IS A DYNAMIC ACTIVITY.

EYES DARTING, EVER IN MOTION,

NEVER STATIC,

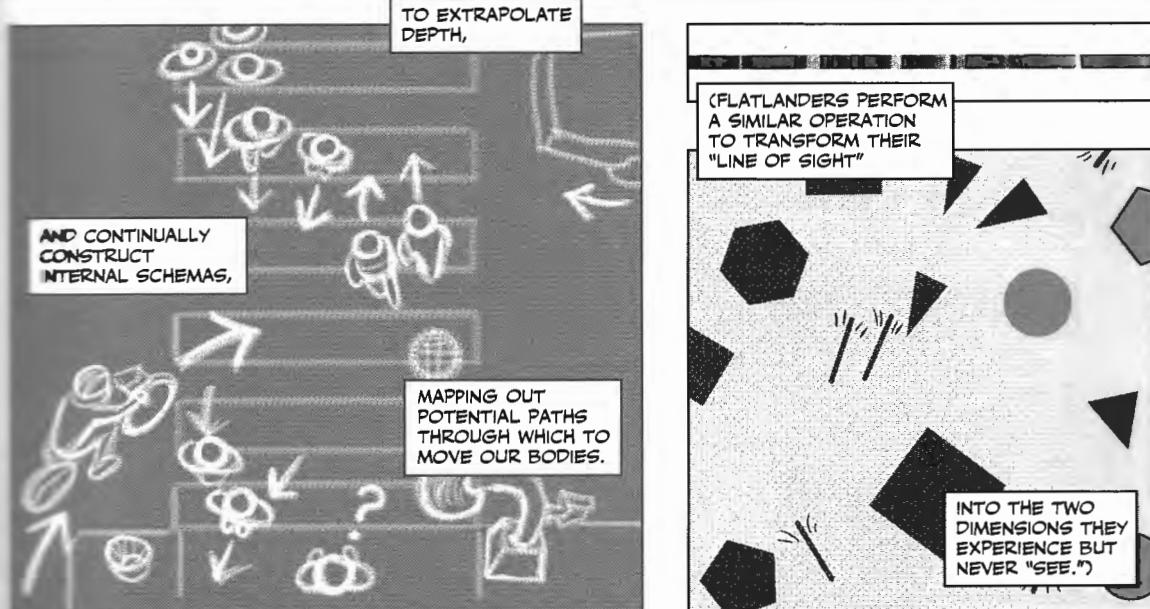
WE ARE CONSTANTLY MAKING COMPARISONS, EVALUATING, AND CONTEXTUALIZING ALL WE ENCOUNTER.

VISION REACHES OUT, EXPLORING OUR SURROUNDINGS AS IF BY TOUCH,

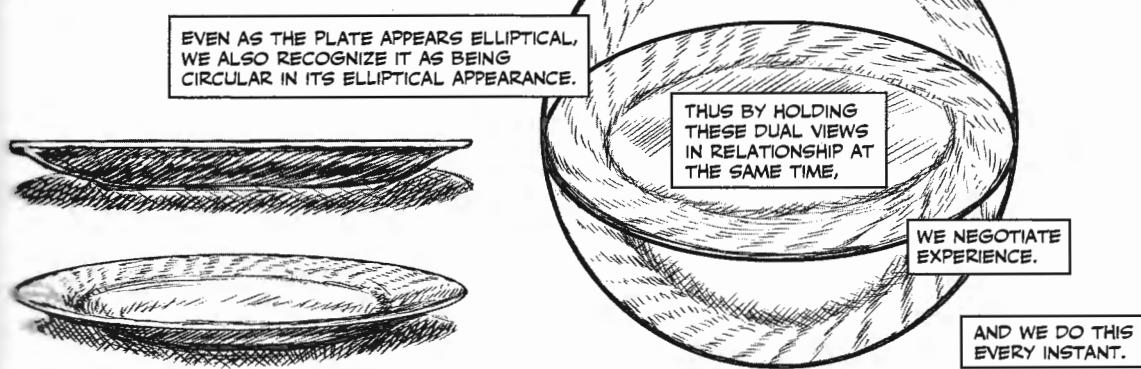
FEELING OUR WAY AROUND CORNERS AND BEHIND OBSCURED VIEWS,

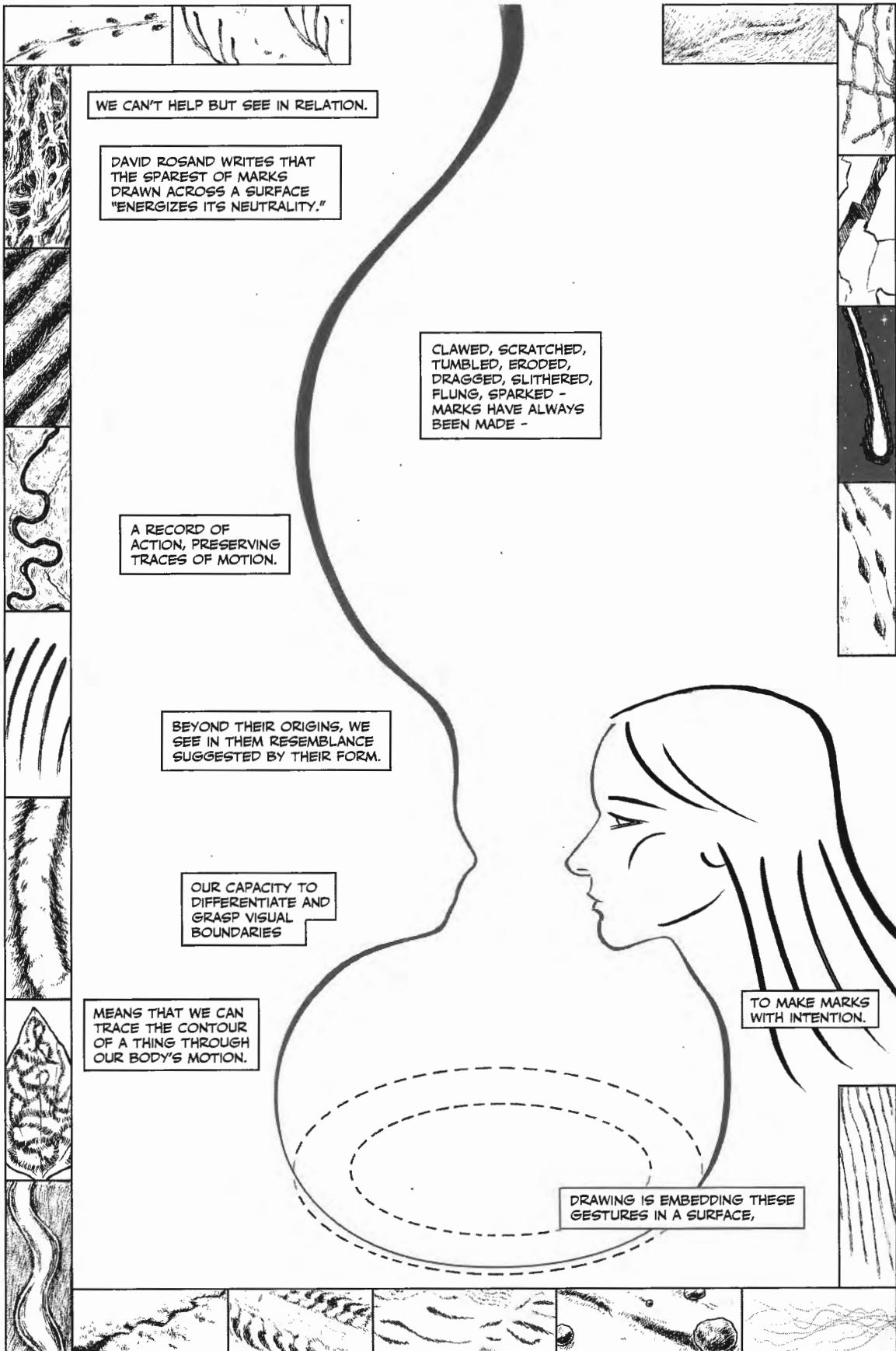
CONTINUOUSLY REVEALING NEW ASPECTS,

GLEANING FURTHER INFORMATION TO ACTIVELY FORMULATE UNDERSTANDING.



ALVA NOË SUGGESTS THAT "PERCEPTUAL EXPERIENCE IS A WAY OF ENCOUNTERING HOW THINGS ARE BY MAKING CONTACT WITH HOW THEY APPEAR TO BE."





FROM CALM TO HEIGHTENED,
A DRAWN LINE CARRIES THE
MAKER'S EXPRESSION.

AND RISE UP.

TO STAND TALL AGAINST
GRAVITY'S PULL

WE RECOGNIZE SOFT CURVES
AS COMFORTING AND JAGGED
MOVEMENTS AS SHARP EDGES
OR TREACHEROUS PEAKS.

WE KNOW TOO WHAT
IT FEELS LIKE



AND TO
FALL.

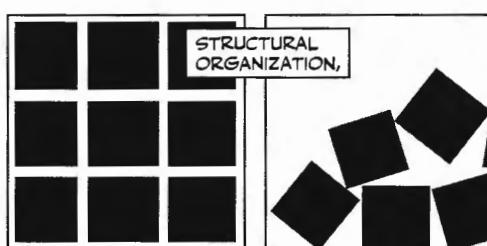
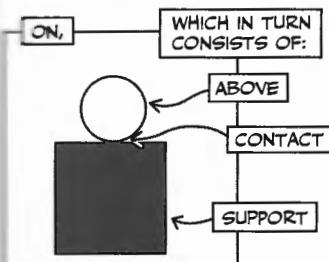
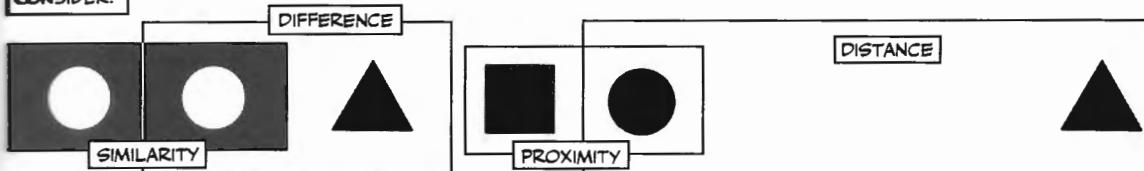
CLOSING IN ON ITSELF,
LINE BECOMES OUTLINE
TO DESCRIBE SHAPE.



THERE ARE SKILLS, DRAFTSMANSHIP, BUT AT ITS CORE
DRAWING IS EXPLOITING OUR SEEING IN RELATION.

BY ORCHESTRATING THE RELATIONSHIP BETWEEN ELEMENTS
AND THE SPACE THEY INHABIT, WE CAN TRIGGER
CORRESPONDENCE WITH EXPERIENCE BOTH SEEN AND FELT.

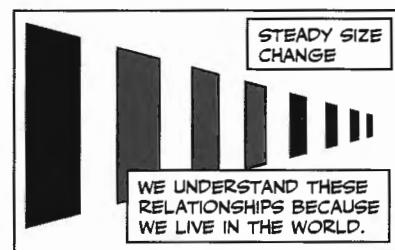
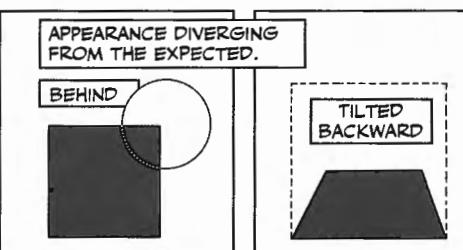
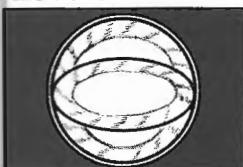
CONSIDER:



AND ITS
LACK.

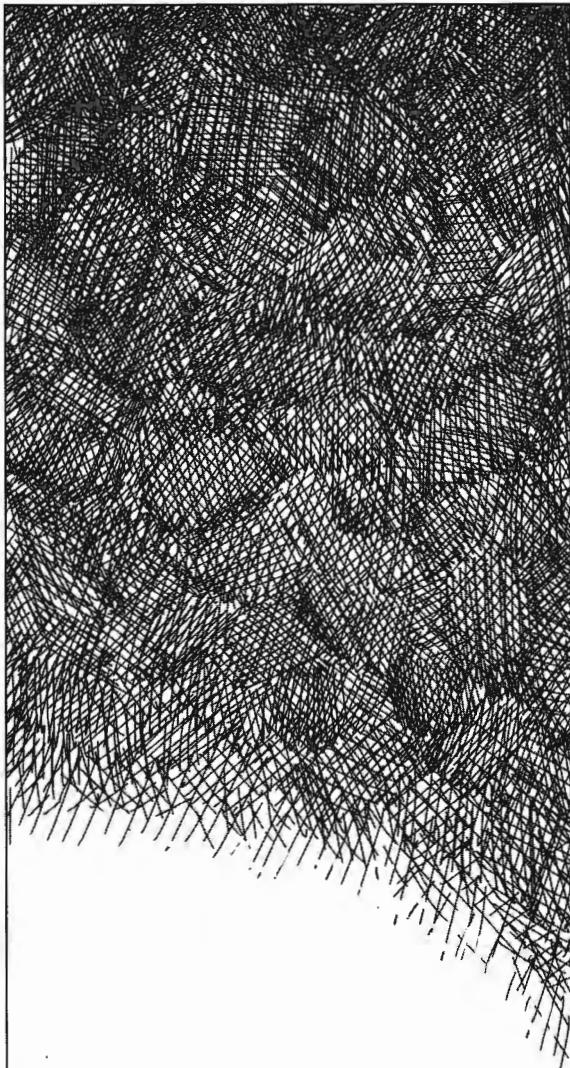


DEPTH IS IMPLIED BY
COMPARING, AS ARNHEIM
PUT IT, "WHAT IS WITH
WHAT OUGHT TO BE" -

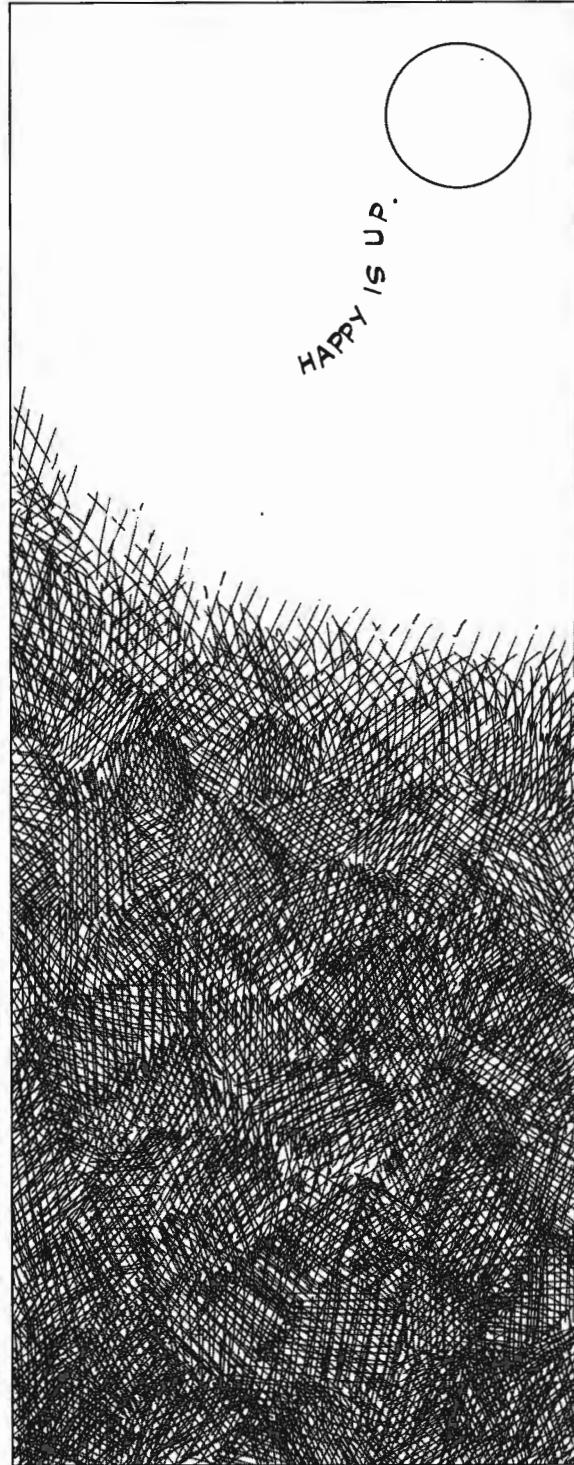


LAKOFF AND JOHNSON AND NÚÑEZ SAY THAT OUR FUNDAMENTAL CONCEPTS DO NOT SPRING FROM THE REALM OF PURE, DISEMBODIED REASON, BUT ARE GROUNDED IN OUR SEEING AND BEING IN THE WORLD.

THAT IS, THROUGH OUR EVERYDAY PERCEPTUAL AND BODILY ACTIVITIES, WE FORM DYNAMIC IMAGE-LIKE STRUCTURES THAT ENABLE US TO ORGANIZE AND MAKE SENSE OF OUR EXPERIENCE.



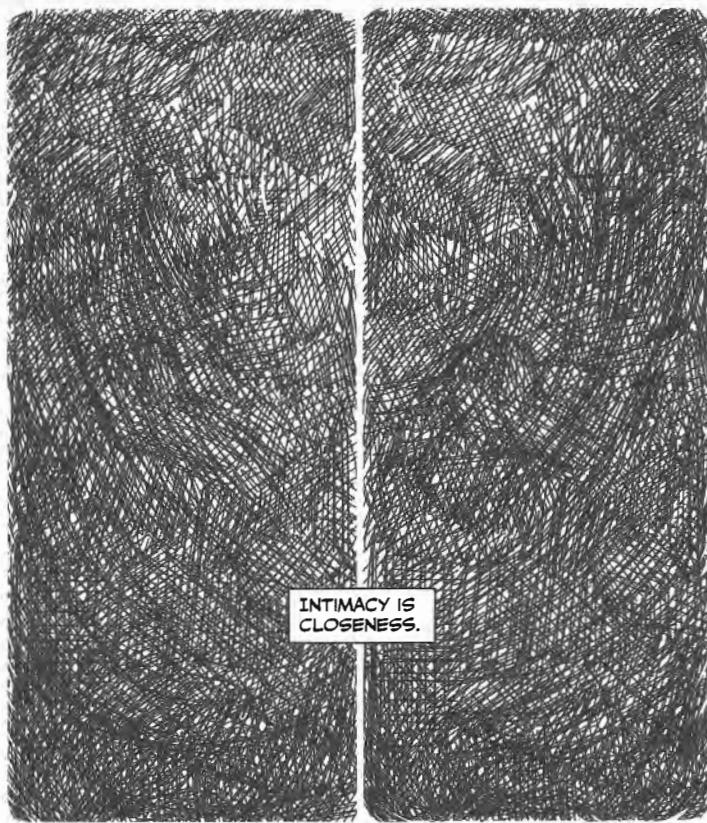
SAD
'S
DOWN.



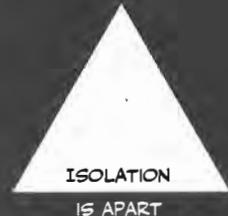
THESE STRUCTURES OPERATE BELOW OUR CONSCIOUS AWARENESS AND SHAPE OUR THINKING AND BEHAVIOR.

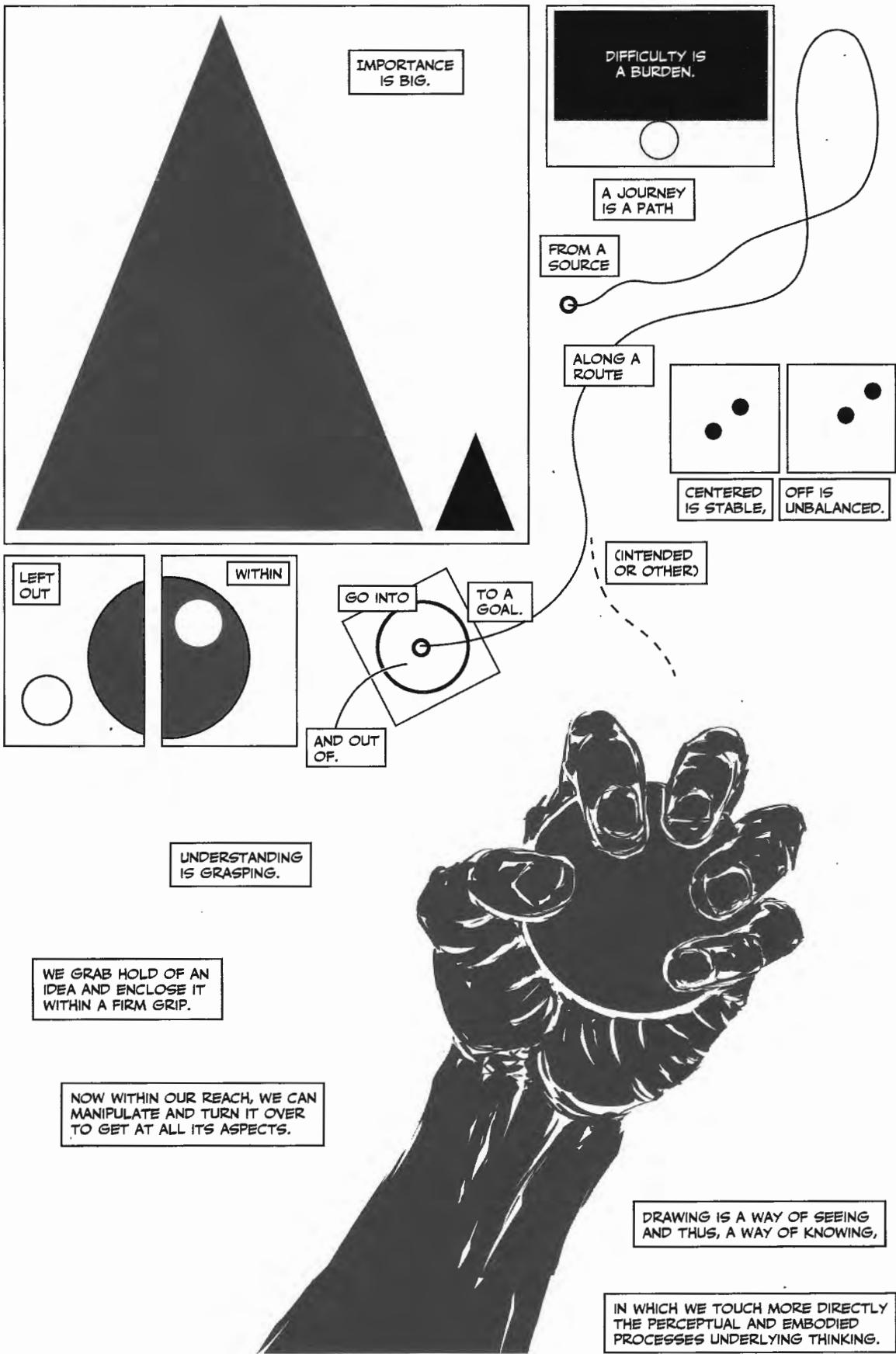
CONCRETE EXPERIENCES SERVE AS THE PRIMARY BUILDING BLOCKS FROM WHICH WE EXTEND OUR CAPACITY FOR THOUGHT AND GIVE RISE TO MORE ABSTRACTED CONCEPTS.

WE UNDERSTAND THE NEW IN TERMS OF THE KNOWN.



INTIMACY IS
CLOSENESS.





THE PREVAILING IMAGE OF THINKING IS ALL IN OUR HEADS,

WHILE WE REMAIN STILL IN BODY.



FOR ALL OUR MENTAL PROWESS, OUR MINDS ARE NOT LIMITLESS.



DRAWING, AS MASAKI SUWA AND BARBARA TVERSKY SUGGEST, IS A MEANS OF ORCHESTRATING A CONVERSATION WITH YOURSELF.

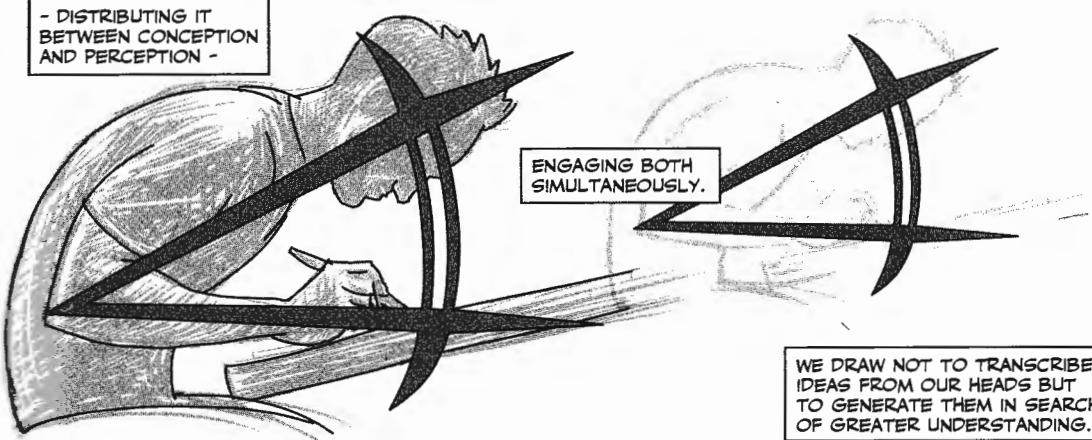


PUTTING THOUGHTS DOWN ALLOWS US TO STEP OUTSIDE OURSELVES,

AND TAP INTO OUR VISUAL SYSTEM AND OUR ABILITY TO SEE IN RELATION.

WE THUS EXTEND OUR THINKING

- DISTRIBUTING IT BETWEEN CONCEPTION AND PERCEPTION -



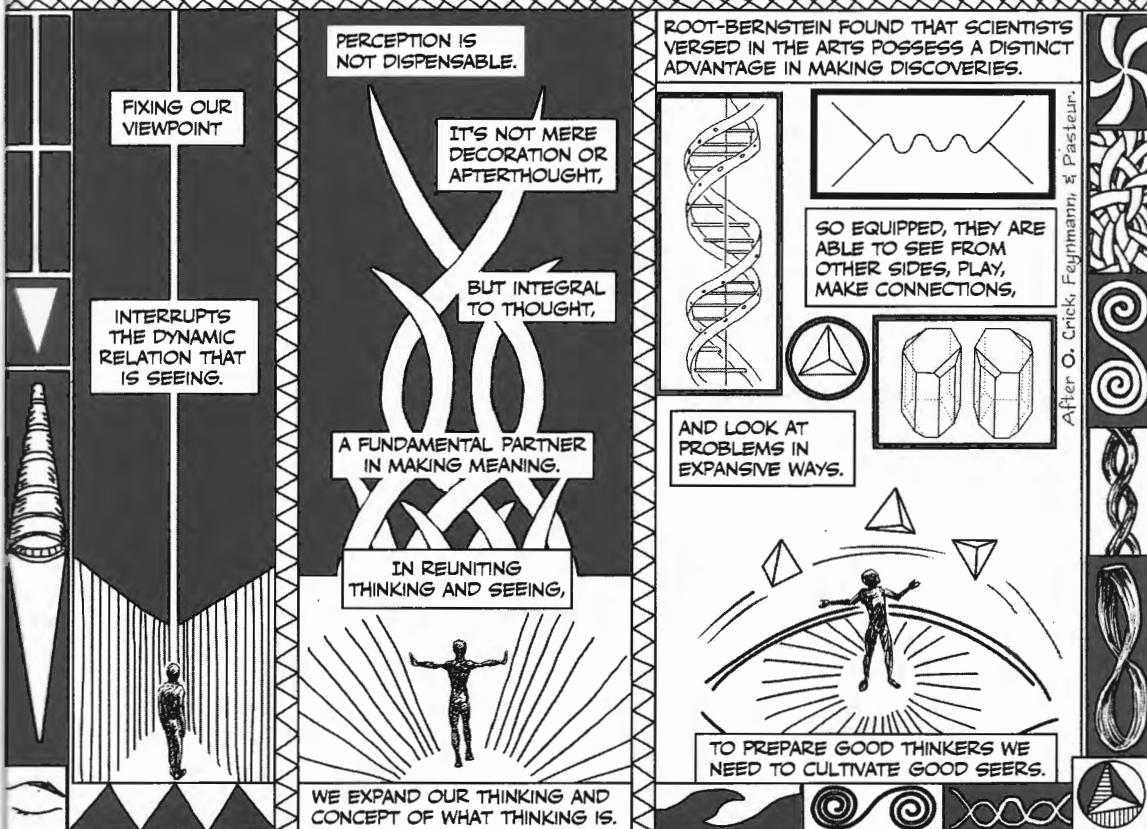
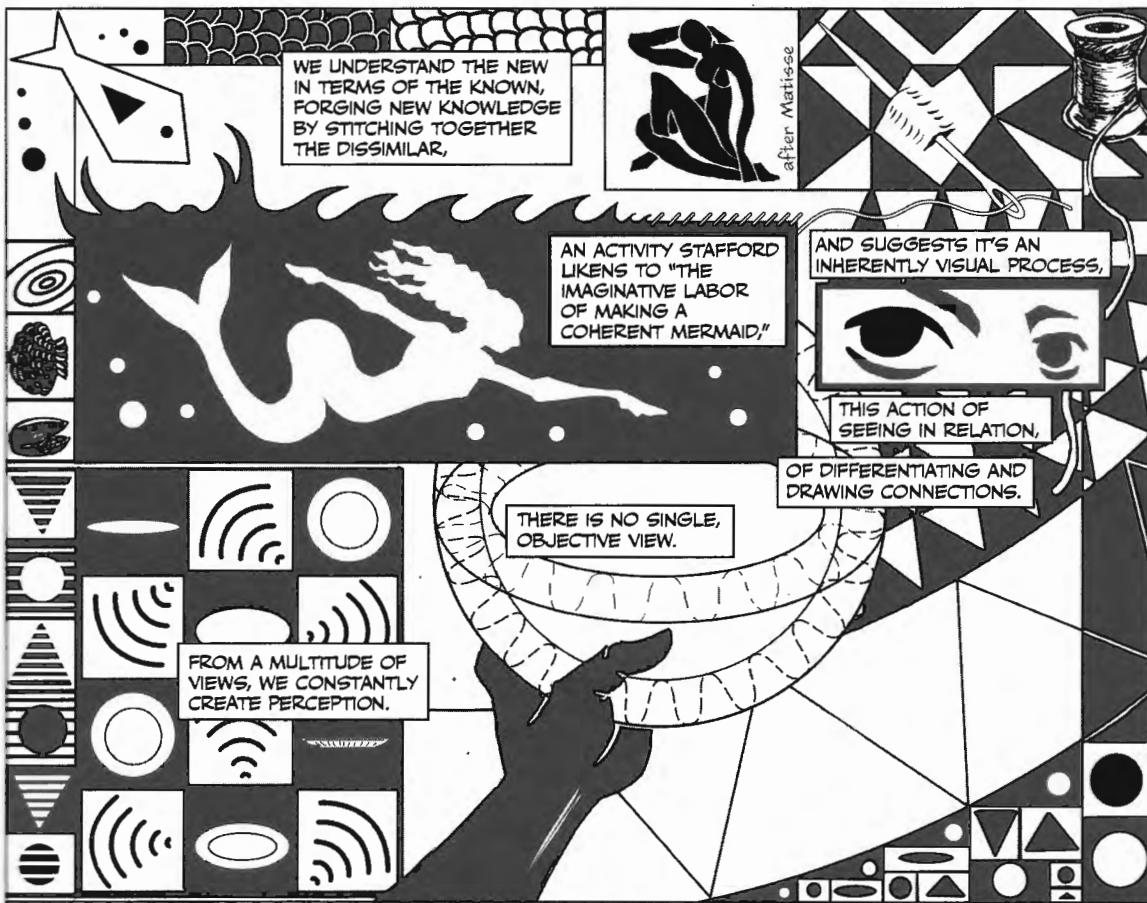
ENGAGING BOTH SIMULTANEOUSLY.

WE DRAW NOT TO TRANSCRIBE IDEAS FROM OUR HEADS BUT TO GENERATE THEM IN SEARCH OF GREATER UNDERSTANDING.

CHRIS MOFFETT WRITES THAT MOVING IS THE PROPER MODE OF THOUGHT: "THE WAY WE FIND OUR WAY." THE PHYSICAL ACTIVITY OF DRAWING OCCURS IN DYNAMIC RELATIONSHIP WITH THE ARTIST'S VISUAL RESPONSE TO WHAT'S PUT DOWN.

DRAWER AND DRAWING JOURNEY FORTH INTO THE UNKNOWN TOGETHER.





ARMED WITH MULTIPLE WAYS
OF SEEING, WE GAIN ACCESS
TO MULTIDIMENSIONAL SIGHT

LOCKSTEP,

- A SPHERE IN FLATLAND -

THE LINE...

WHERE EXISTING BARRIERS TUMBLE
AND CREATIVE POSSIBILITIES FLOURISH.

SUCH IS THE CASE WITH OUR
FLATLANDERS, TRAPPED WITHIN
THE BORDERS OF THEIR VISION.

LINAR
OTH
IMAGINE

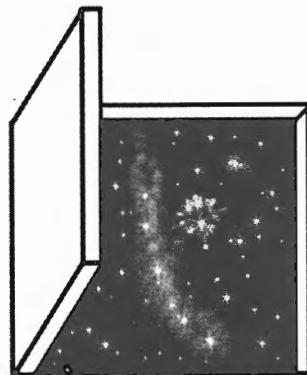
SOFT AND DE

...ALIGNED IN A SINGLE DIMENSION.

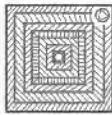
BUT THERE ARE
FURTHER DIMENSIONS
STILL TO EXPLORE...

five

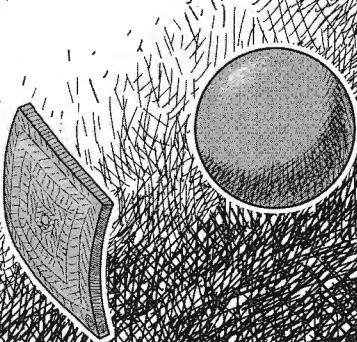
THE FIFTH DIMENSION



IN FLATLAND, A. SQUARE HAS
A FINAL PROPHETIC VISION,



IN WHICH HE AND THE SPHERE
VISIT POINTLAND, THE ABYSS
OF NO DIMENSIONS.



THERE, THEY ENCOUNTER ITS
SOLE INHABITANT, A SOLIPSISTIC
MONARCH AT ONCE HIS OWN
WORLD AND HIS OWN UNIVERSE.

THEIR ATTEMPTS TO MAKE THEIR
PRESENCE KNOWN TO HIM WENT
NOWHERE - HE COULDN'T CONCIEVE
OF ANY OTHER EXCEPT HIMSELF.

IN THE REALIZATION THAT
THIS ISN'T ALL THERE IS,



THAT WE'RE NOT ALONE,

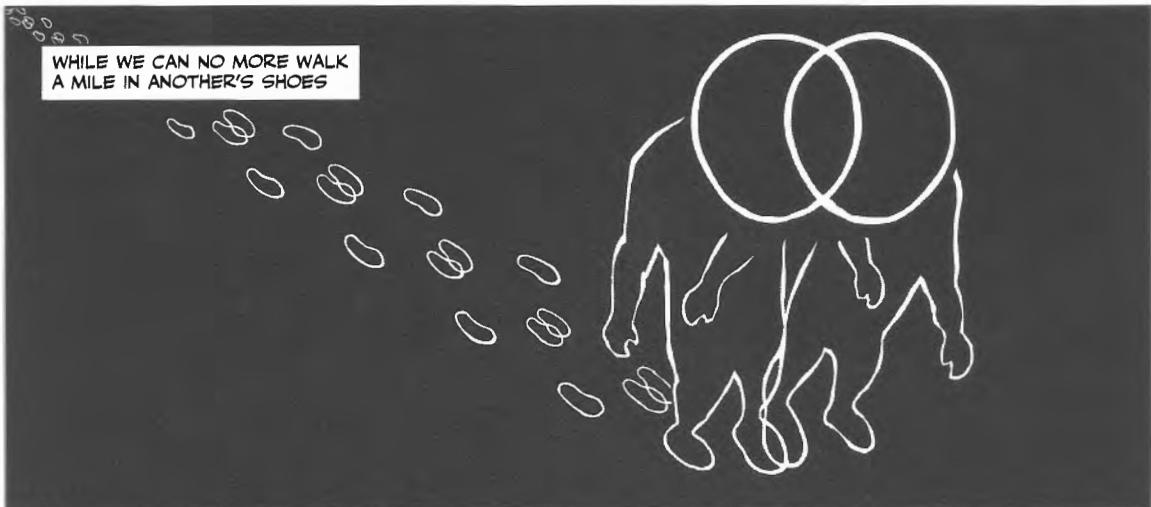
THAT THERE ARE OTHER
VANTAGE POINTS,

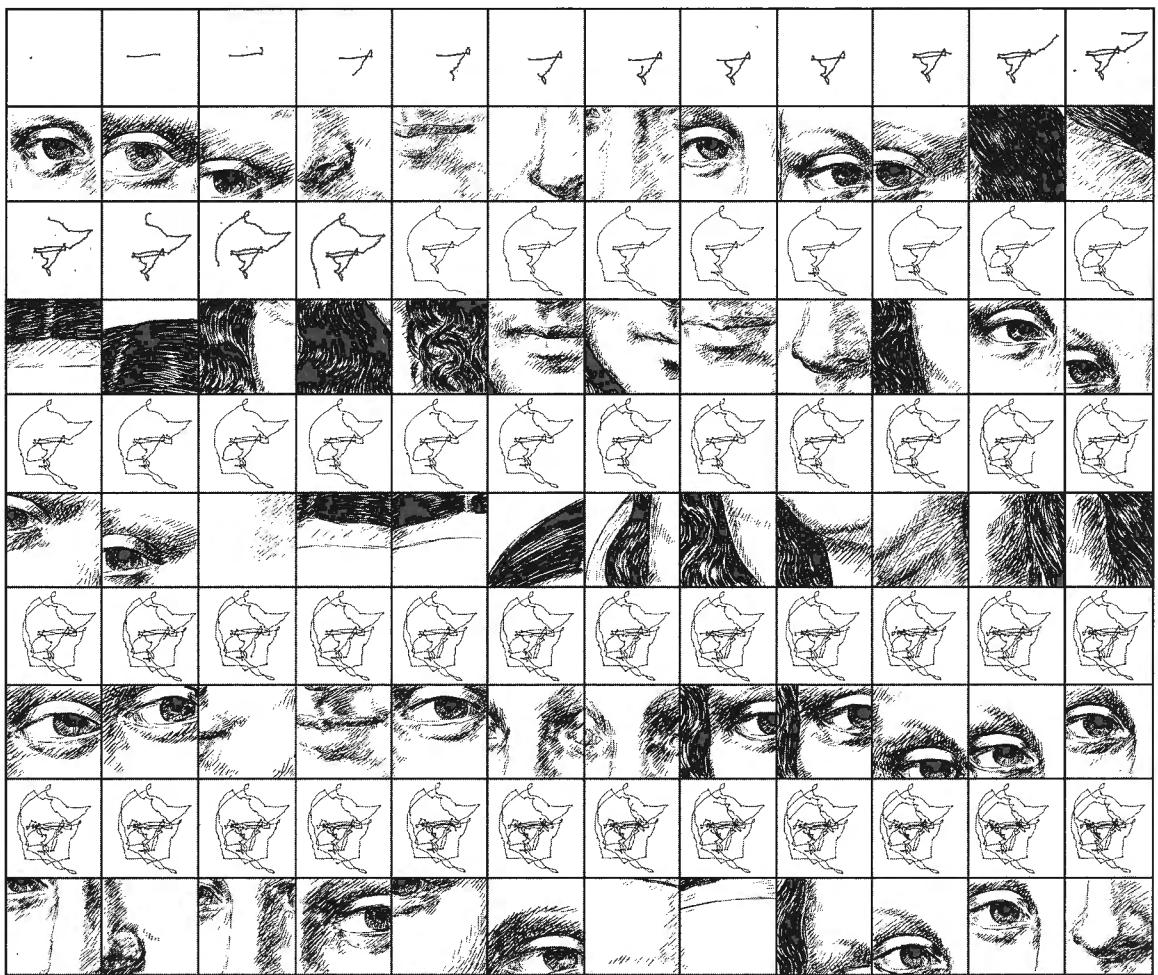
AND IN FACT, THERE ARE
BOUNDLESS POSSIBLE
PERSPECTIVES BEYOND
WHERE WE'VE BEEN,

OR EVEN WHERE
WE CAN GO,

THERE IS IMAGINATION.

IMAGINATION LETS US EXCEED OUR
INEVITABLY LIMITED POINT OF VIEW TO
FIND PERSPECTIVES NOT IN EXISTENCE
OR DIMENSIONS NOT YET ACCESSIBLE.



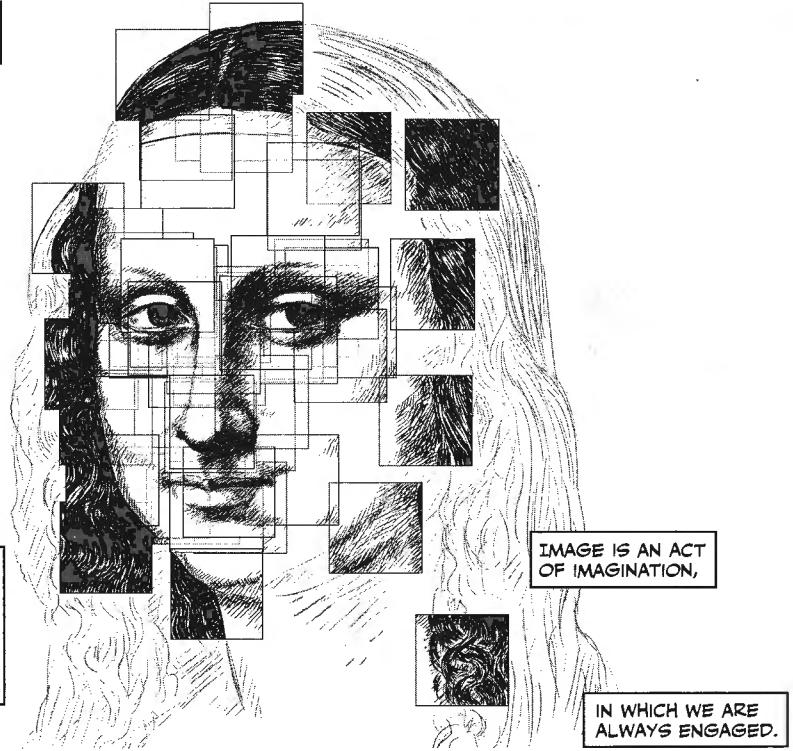


"TO ENCOUNTER" THE WORLD
OUTSIDE OURSELVES,

DANCING AND DARTING, OUR
EYES GO TO WORK, A FLURRY
OF MOTION PUNCTUATED BY
BRIEF PAUSES A FEW TIMES A
SECOND IN WHICH THEY FIX ON A
TARGET - BEFORE DASHING OFF
TO SEEK ANOTHER OF INTEREST.

OUR VISION CAPTURES
DISCONNECTED STATIC
SNAPSHOTS, AN INCOMPLETE
PICTURE RIDDLED WITH GAPS.

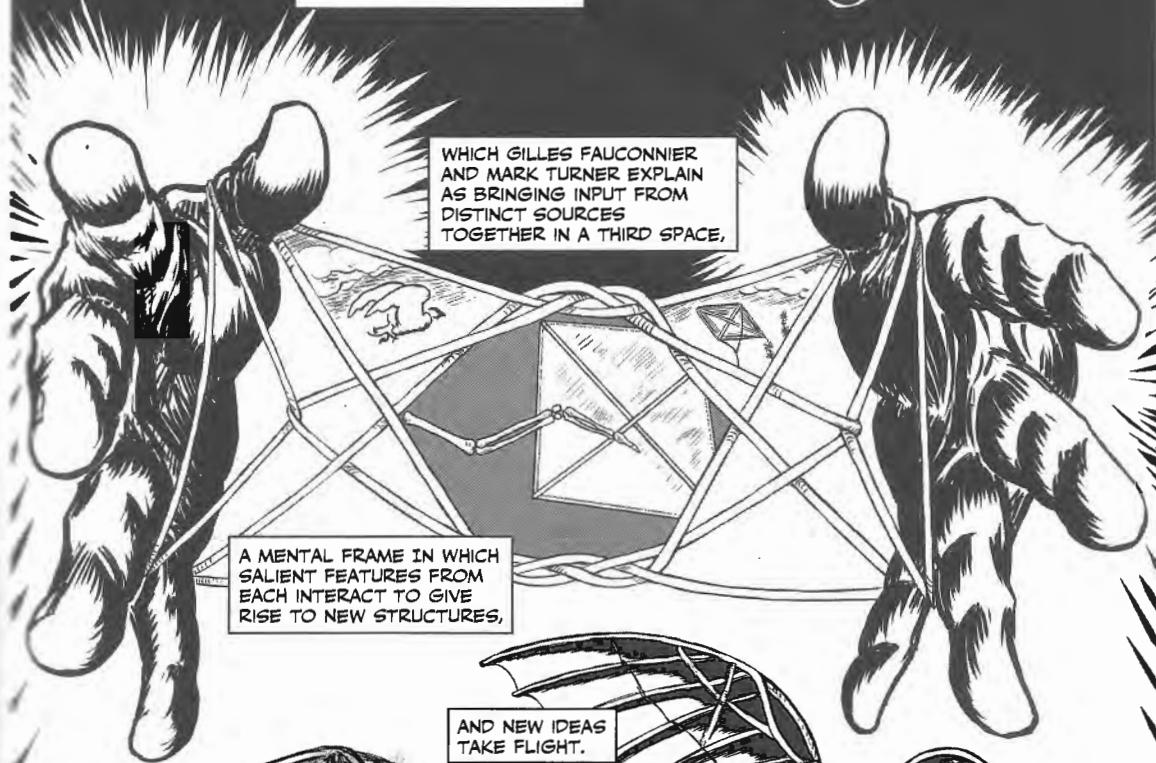
IT IS THE IMAGINATION, ETIENNE
PELAPRAT AND MICHAEL COLE
ASSERT, THAT FILLS IN THE GAPS
AND LINKS FRAGMENTS TO
CREATE STABLE AND SINGLE
IMAGES THAT MAKE IT POSSIBLE
FOR US TO THINK AND TO ACT.



BOTH BINDING AGENT AND ACTION,
IMAGINATION ALLOWS US TO SPAN
GAPS IN PERCEPTION.

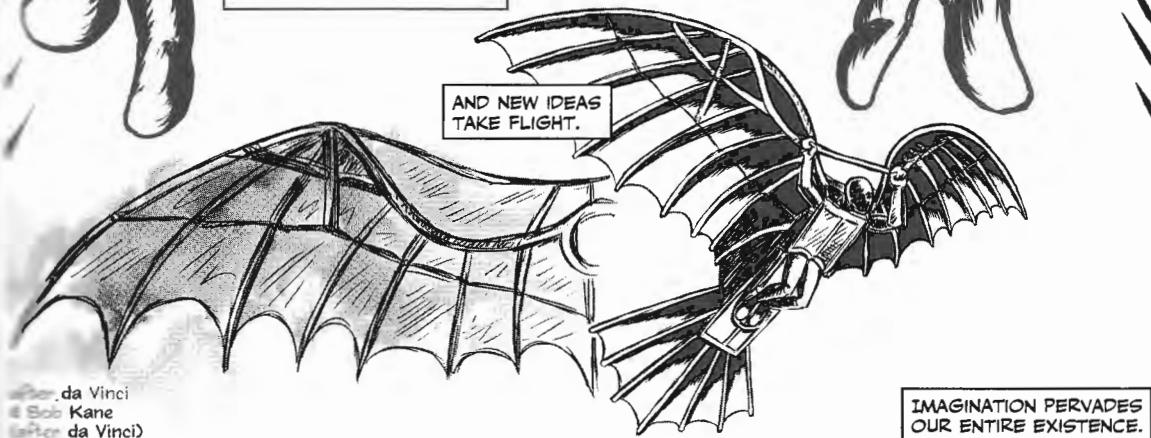


FROM THE NOVEL TO THE
COMMONPLACE, IT'S HOW
WE FORMULATE CONCEPTS,

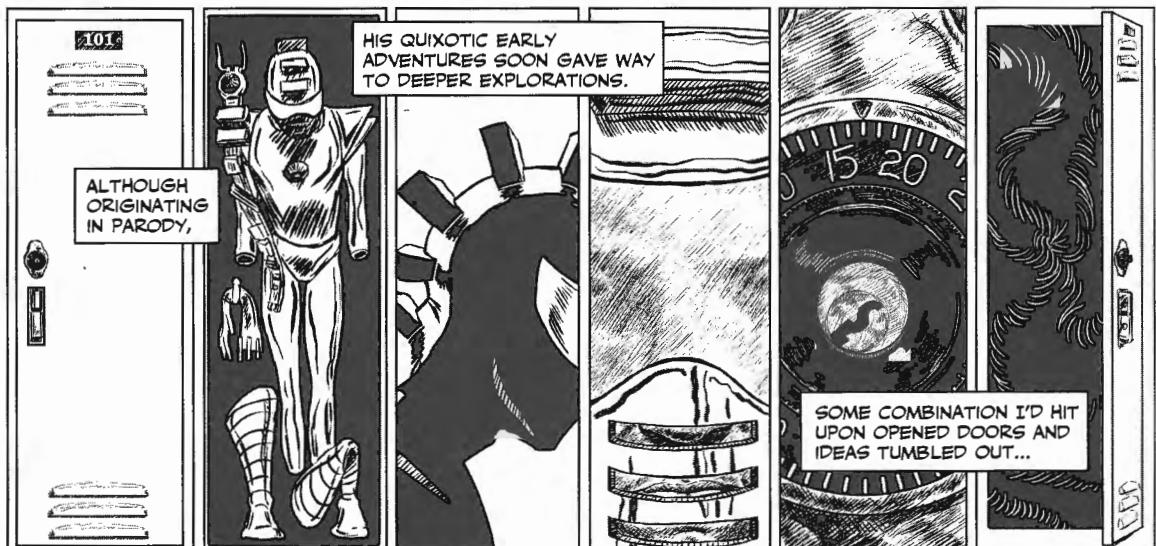
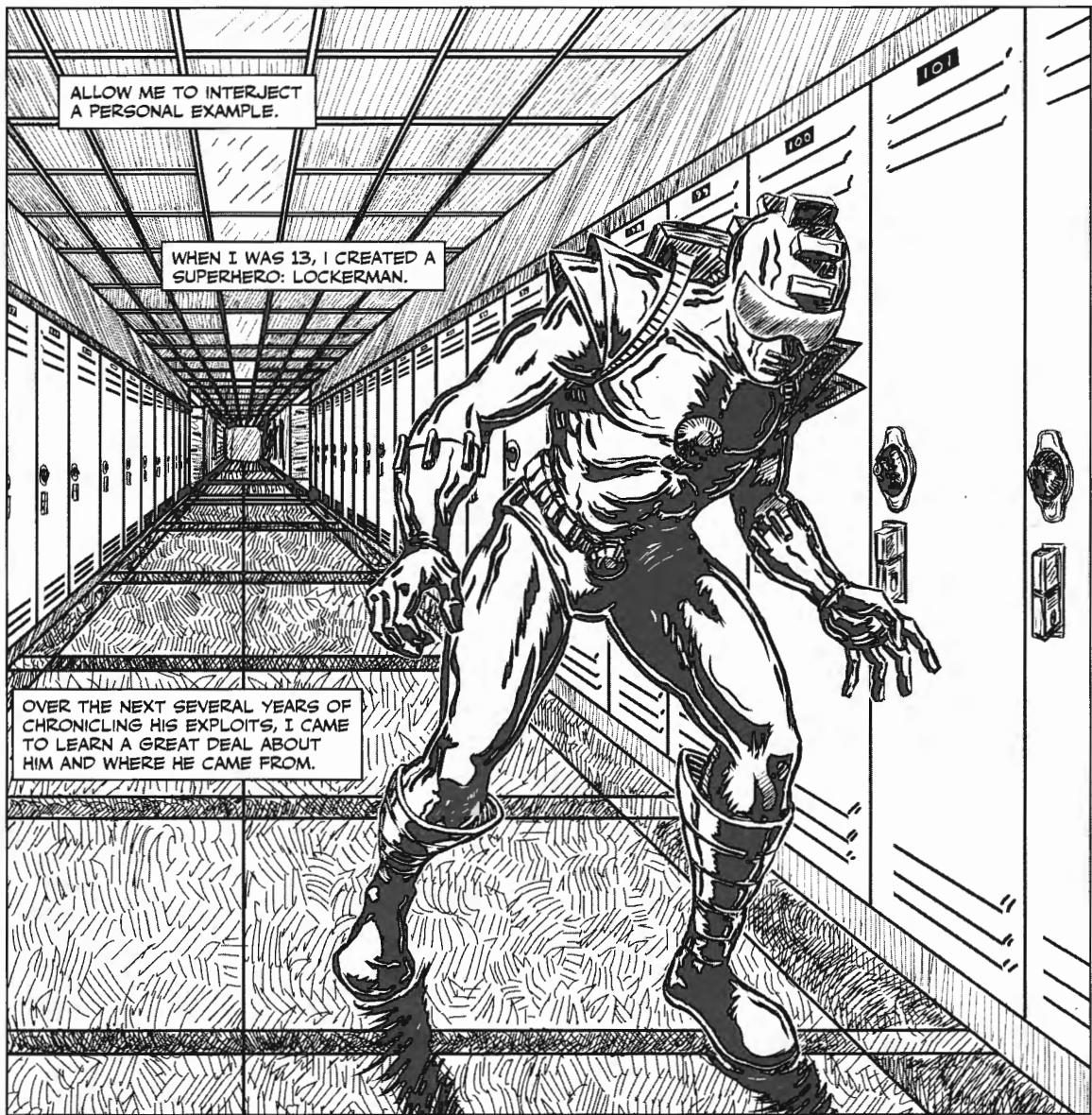


A MENTAL FRAME IN WHICH
SALIENT FEATURES FROM
EACH INTERACT TO GIVE
RISE TO NEW STRUCTURES,

AND NEW IDEAS
TAKE FLIGHT.



IMAGINATION PERVERSES
OUR ENTIRE EXISTENCE.



I HAD GIVEN LOCKERMAN
BUT A SINGLE SPECIAL
ABILITY, TO STEP
THROUGH ANY DOOR

(INITIALLY ONLY
LOCKERS),



AND COME OUT ANY
OTHER - ANYWHERE
AND ANY WHEN...

IT IS THIS, THE IN-BETWEEN
SPACE CONNECTING TWO PLACES
OUTSIDE OF THE USUAL WAY.

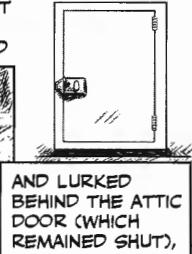
THIS IS IMAGINATION.

A RUPTURE IN THE EXISTING
FABRIC, A FOLD IN SPACE.

LOCKERMAN'S TRUE ORIGINS,
I CAME TO REALIZE,

SPRANG FROM
MY EARLY
FASCINATION
WITH KEYS
AND LOCKS;

MY BROTHER'S TALL
TALES ABOUT WHAT
LAY WITHIN THE
KITCHEN CUPBOARD



(AND WONDERING WHERE
THE STAIRWAY BEHIND
OUR HOUSE MIGHT LEAD);



AS WELL AS WONDERLANDS
ACCESSED BY ORDINARY
PORTALS: RABBIT HOLES,

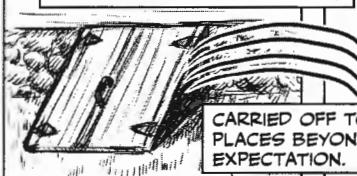


LOOKING GLASSES,



AND WARDROBES.

SOMETIMES, FAILING TO GET
THROUGH THE DOOR STILL
MEANS BEING WHISKED AWAY,



CARRIED OFF TO
PLACES BEYOND
EXPECTATION.

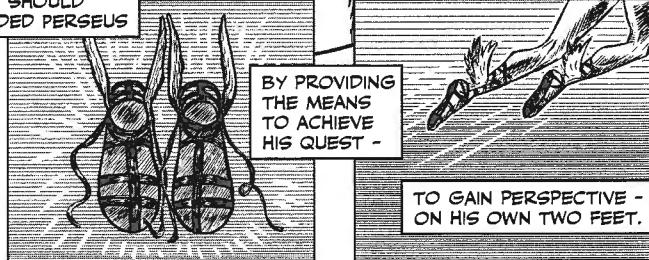
WHATEVER THE MODE OF
TRANSPORTATION -
IMAGINATION OFFERS A
DIFFERENT VANTAGE POINT

FROM WHICH TO
SET OFF ON A
NEW JOURNEY.

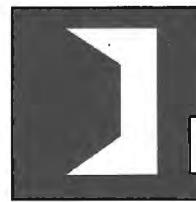
REFLECTING UPON THIS NOW
BRINGS TO MIND SWIFT HERMES,
THE MESSENGER, GUIDE AND
GUARDIAN TO TRAVELERS



WHO, WE SHOULD
NOTE, AIDED PERSEUS



CONSIDER A DOOR'S DUAL NATURE,
SIMULTANEOUSLY BARRIER AND BRIDGE

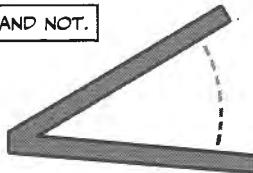


FROM ABOVE,

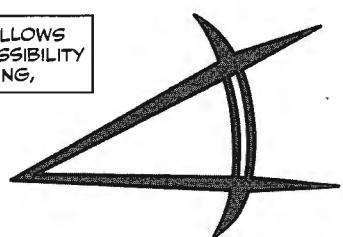
A DOOR CAN BE BOTH FLAT



AND NOT.



ITS HINGE ALLOWS FOR THE POSSIBILITY OF AN OPENING,



THROUGH WHICH TO PASS AND DISPLACE ONE'S EXISTING FRAME OF REFERENCE.

STORIES TOO, ARE A
KIND OF DOORWAY,

OPENINGS,

VEHICLES TO TRANSPORT US.

AS THE STORIES
WITHIN STORIES OF
SCHEHERAZADE SHOW,

STORIES SUSTAIN US AND
OFFER SPACES OF FREEDOM.

THEY LET US REACH ACROSS
TIME AND SPACE TO SHARE IN
ANOTHER'S VIEWPOINT,

TOUCH ANOTHER'S
THOUGHTS,

AND MAKE THEM
PART OF OUR
OWN STORIES.

TO BE CLEAR, BY STORIES, I DON'T MEAN
ONLY WONDROUS TALES, BUT THAT MOST
HUMAN OF ACTIVITIES, THE FRAMING OF
EXPERIENCE TO GIVE IT MEANING.

A TANGENT:

ASTRONOMERS IN
THE ARAB WORLD
REFRAMED GREEK
EXPLANATIONS FOR
PLANETARY MOTION,

Nasir al-Din
al-Tusi

ENABLING COPERNICUS
TO PIVOT OUR VIEWPOINT.

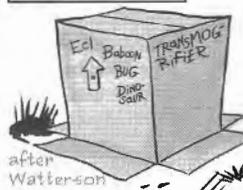
AS NELSON
GOODMAN PUT IT,

THE SUN MOVES OR
IS STILL CAN BOTH BE
TRUE STATEMENTS
OF THE SAME WORLD,

WHICH TRAVESED CULTURES,
LANGUAGES, AND CENTURIES,

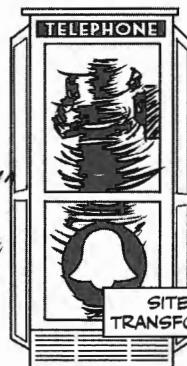
ALL DEPENDENT
ON OUR FRAME
OF REFERENCE.

THESE FRAMES
WE CONSTRUCT,

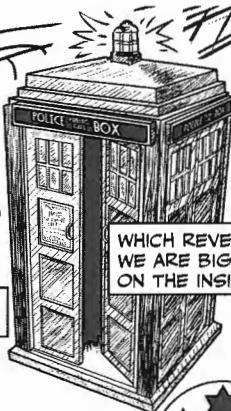


after Watterson

ARE WORK SPACES
TO BLEND IDEAS,



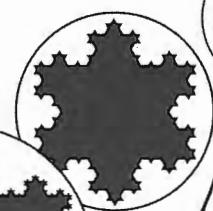
SITES FOR
TRANSFORMATION,



WHICH REVEAL
WE ARE BIGGER
ON THE INSIDE.



INHERENTLY
CRINKLY,



WE POSSESS
VAST DEPTHS
WITHIN DEPTHS,



DIMENSIONS CURLED UP
WITHIN US ACCESSIBLE ONLY
THROUGH IMAGINATION.

IF WE HAVE A
SUPERPOWER,

IT'S THE CAPACITY TO
HOST A MULTIPOLY
OF WORLDS INSIDE US,

ALL OF US DO.

FRAMES OF REFERENCE
FROM WHICH TO SEE THE
SAME WORLD DIFFERENTLY,

TO MAKE THE FAMILIAR STRANGE.

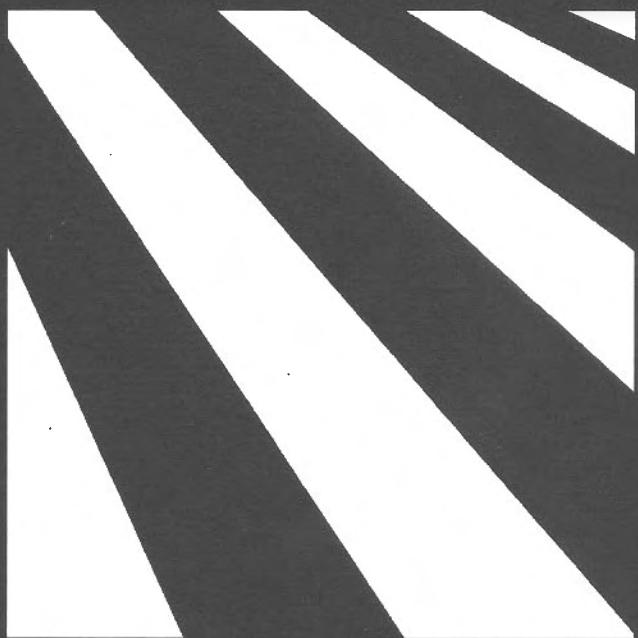
IN PASSING THROUGH
THESE THRESHOLDS,

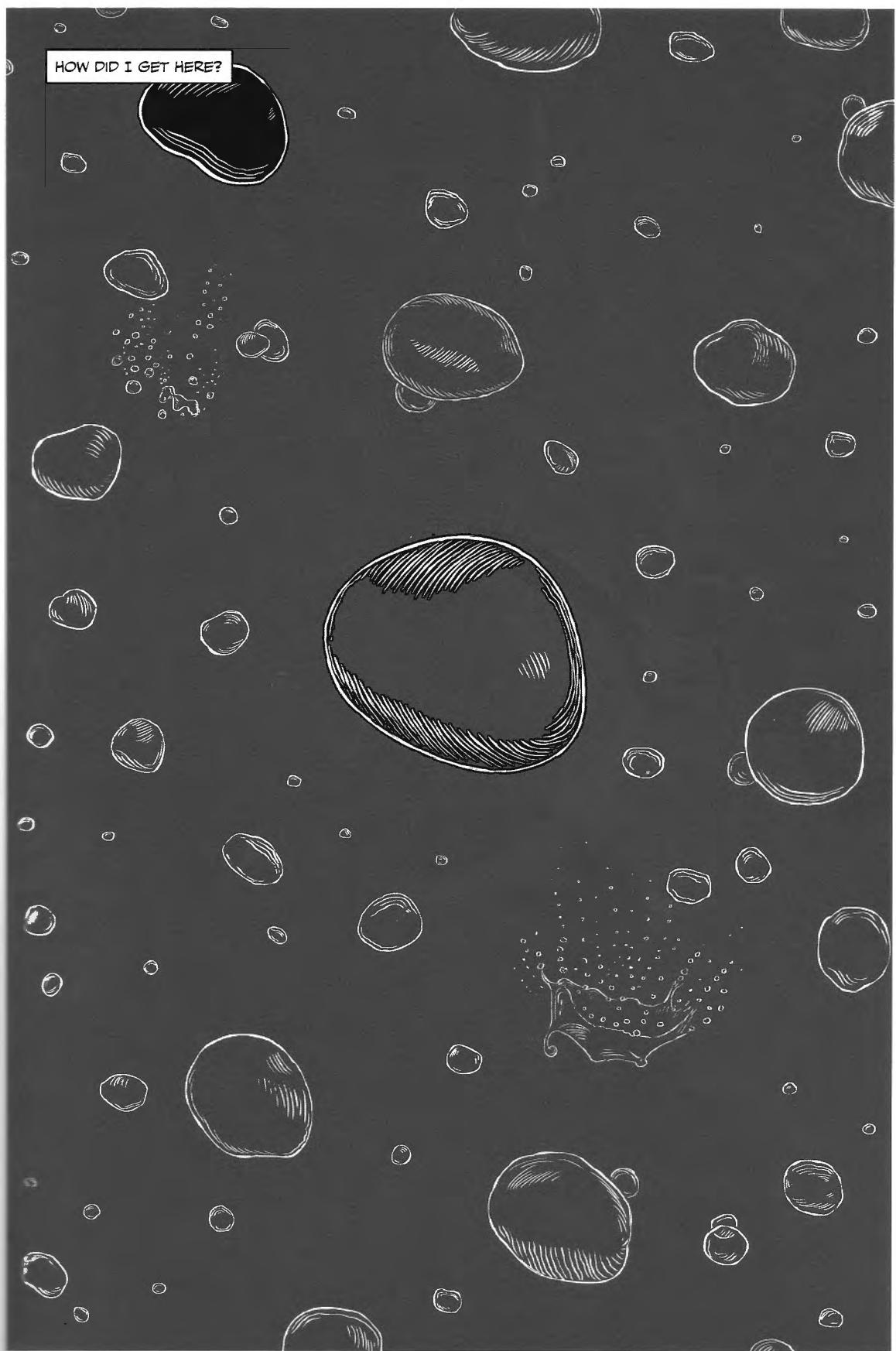


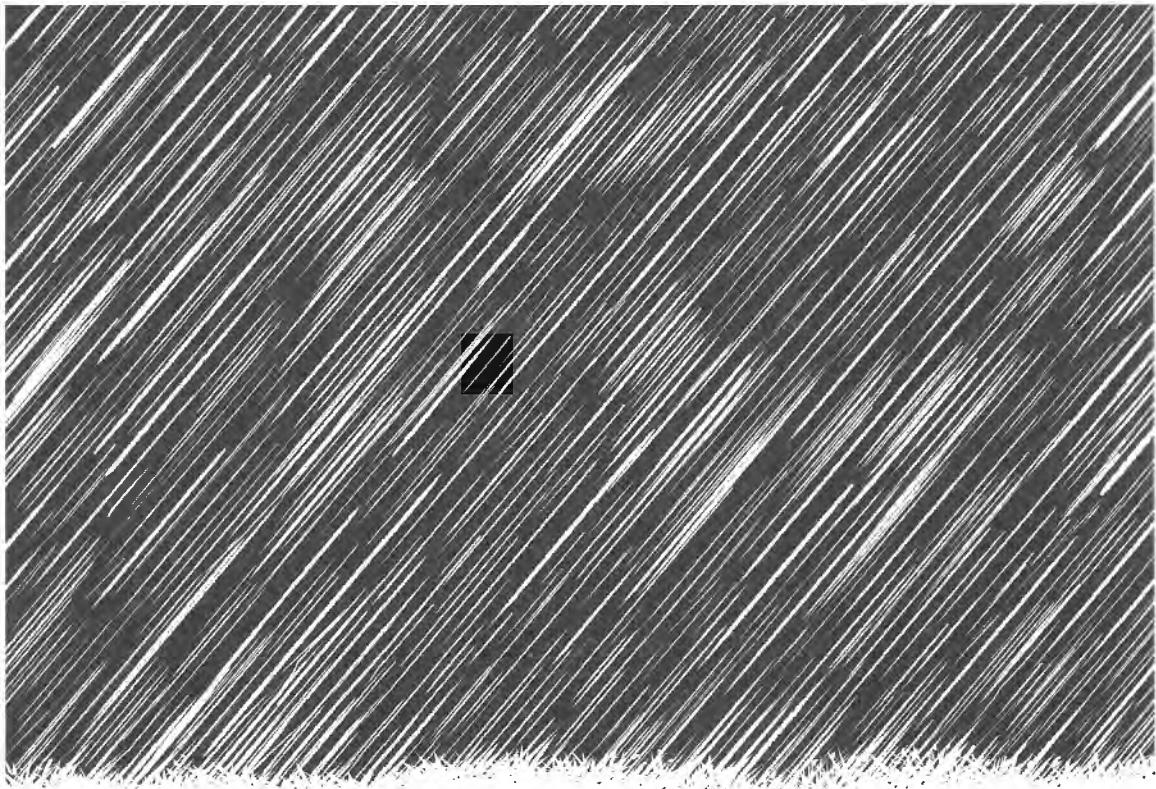
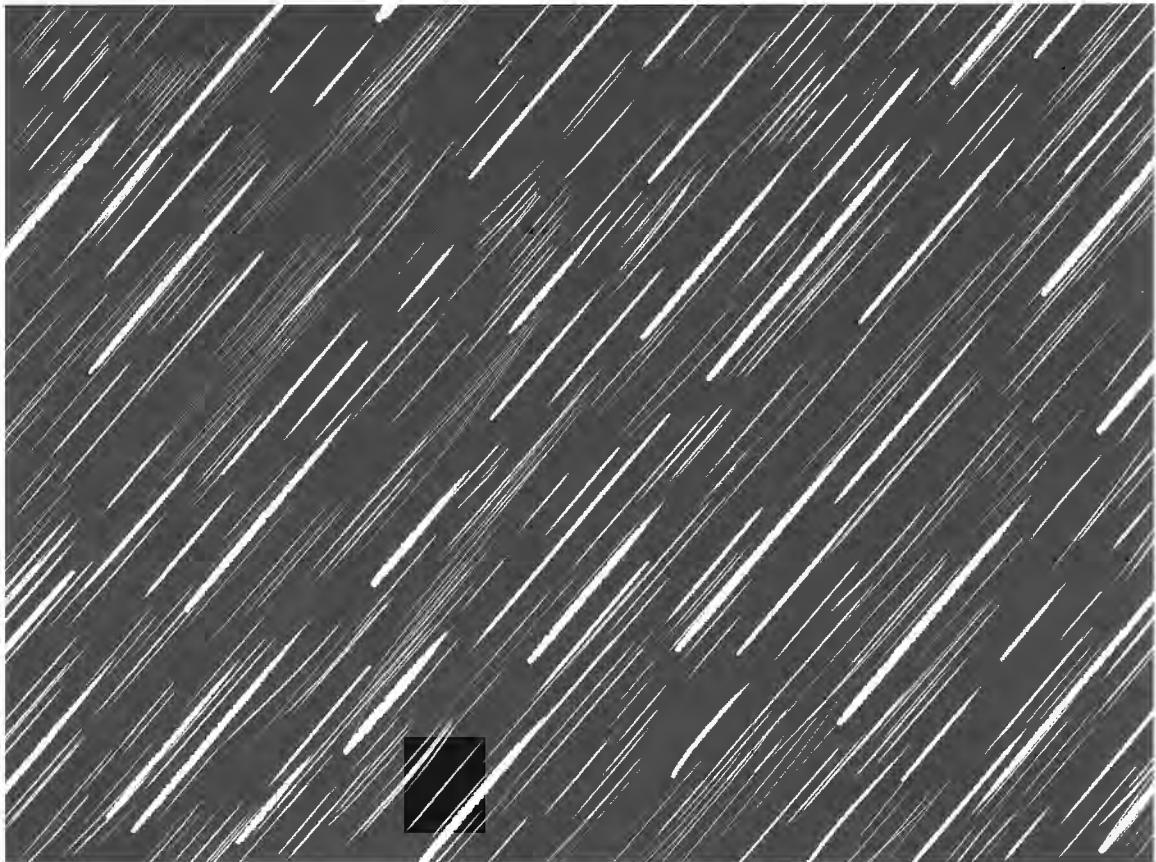
WE EMERGE WITH THE
POSSIBILITY TO BECOME
SOMETHING DIFFERENT.

six

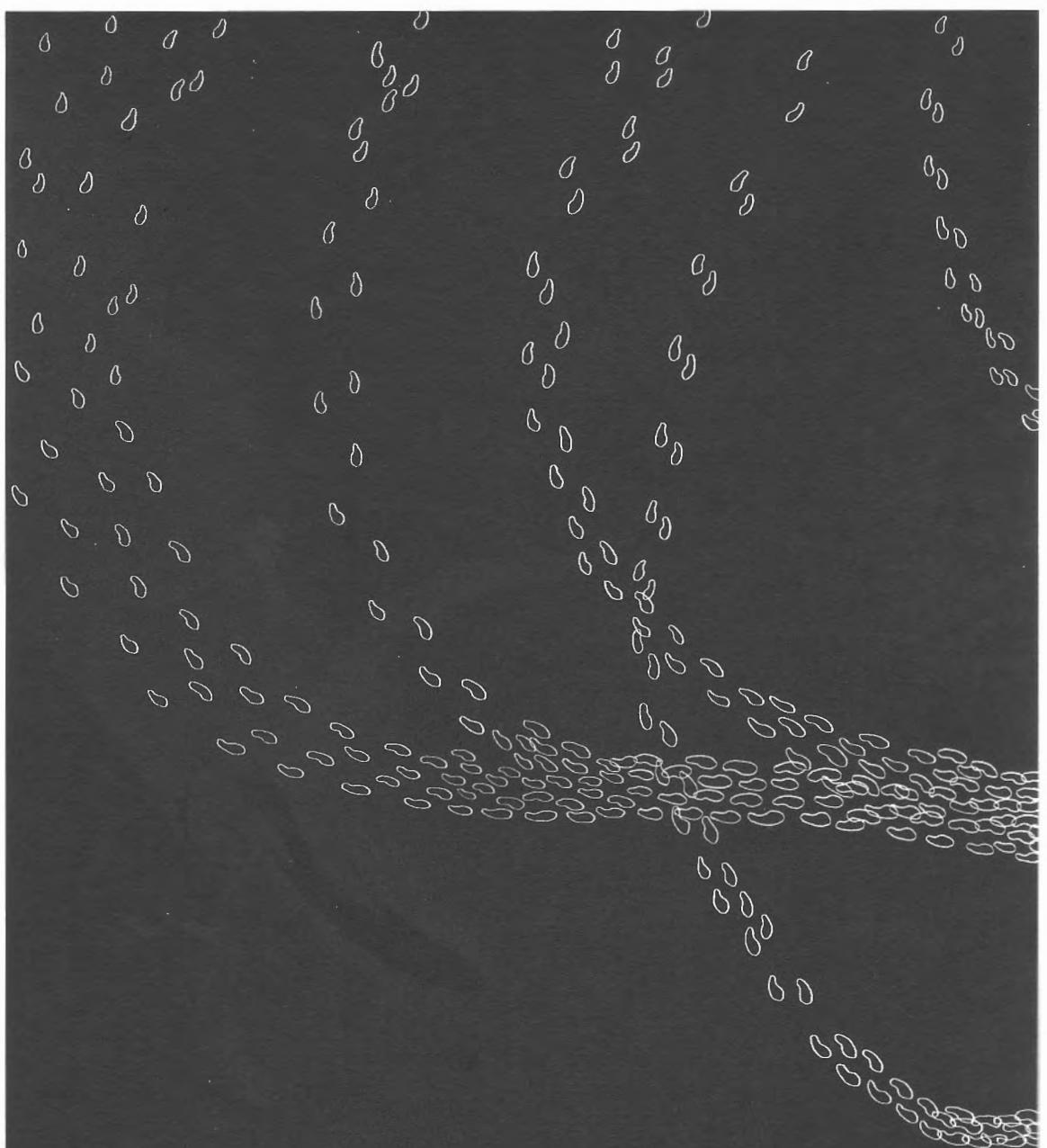
R U T S

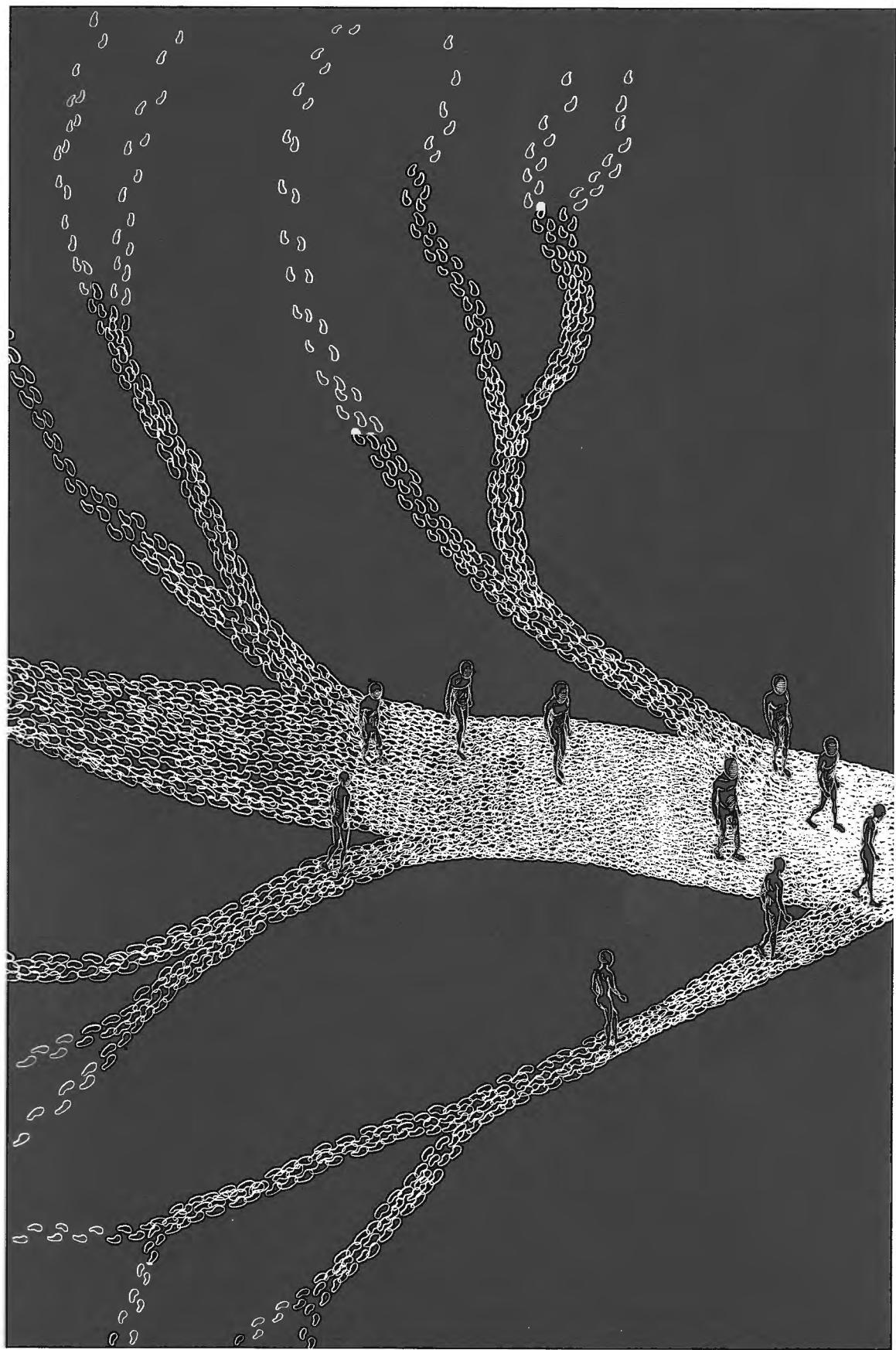








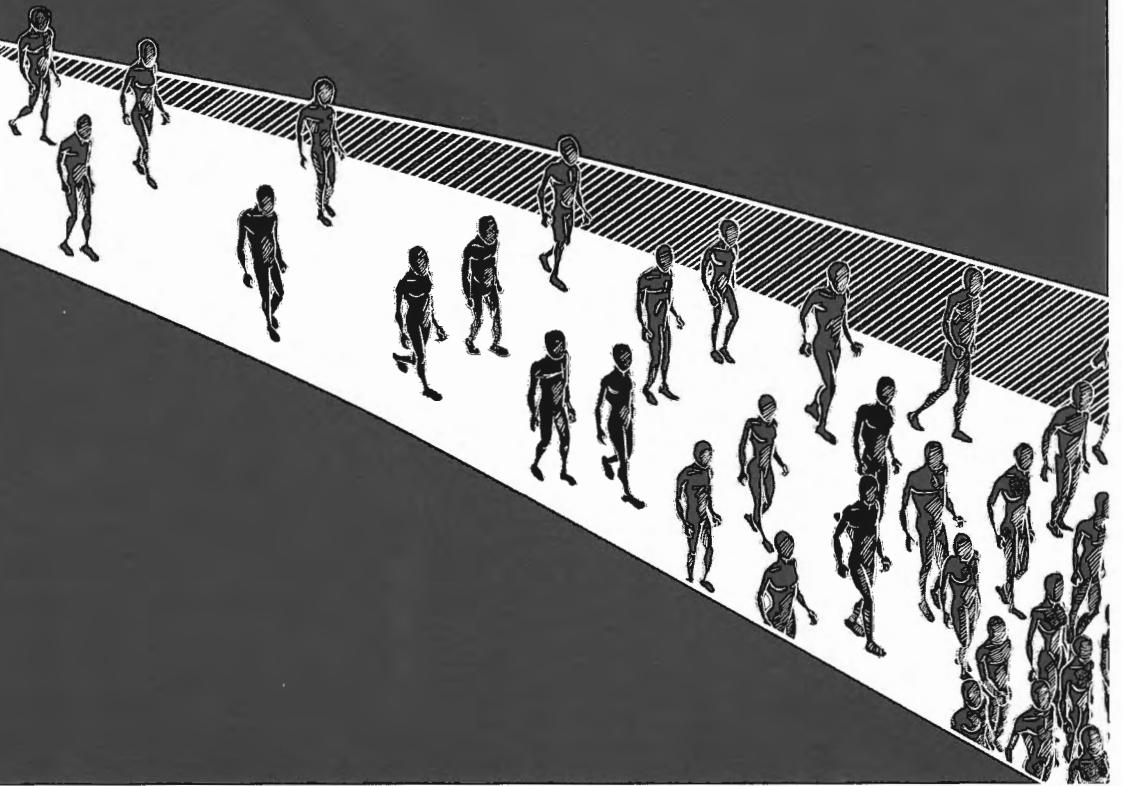


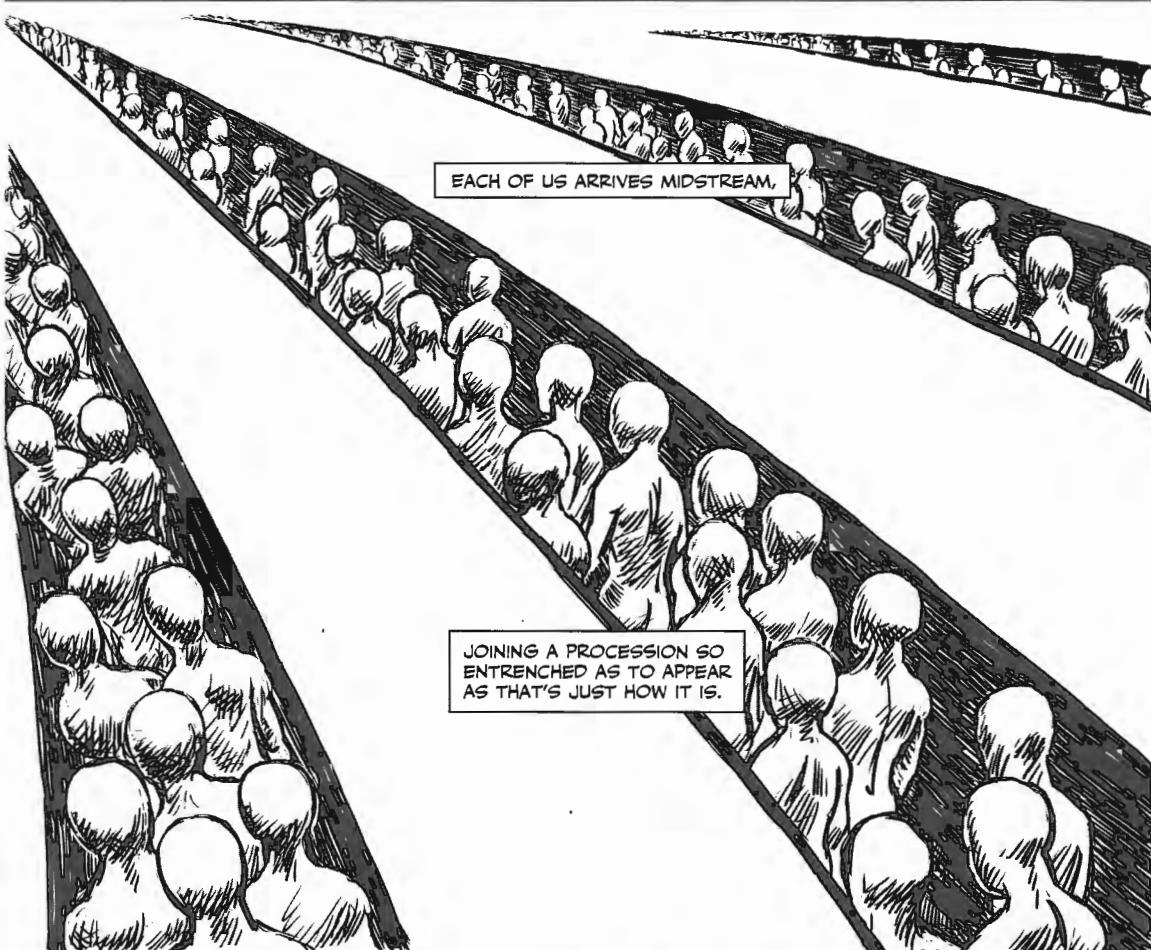
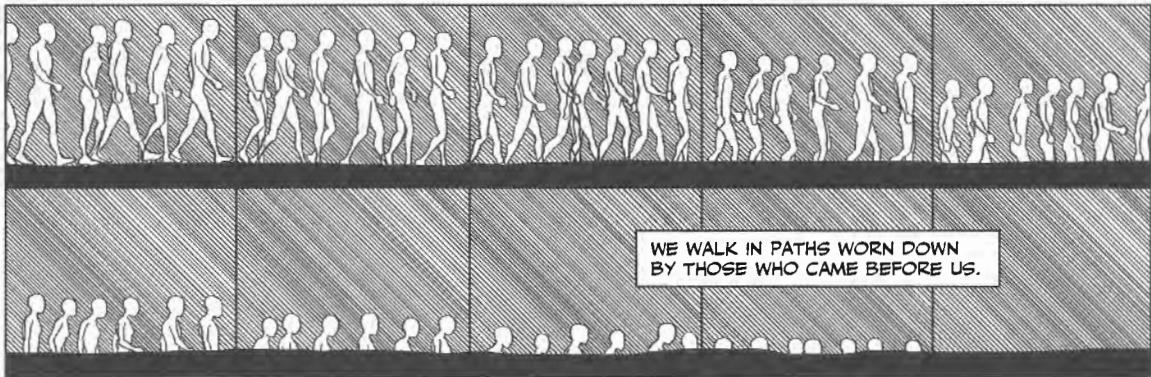


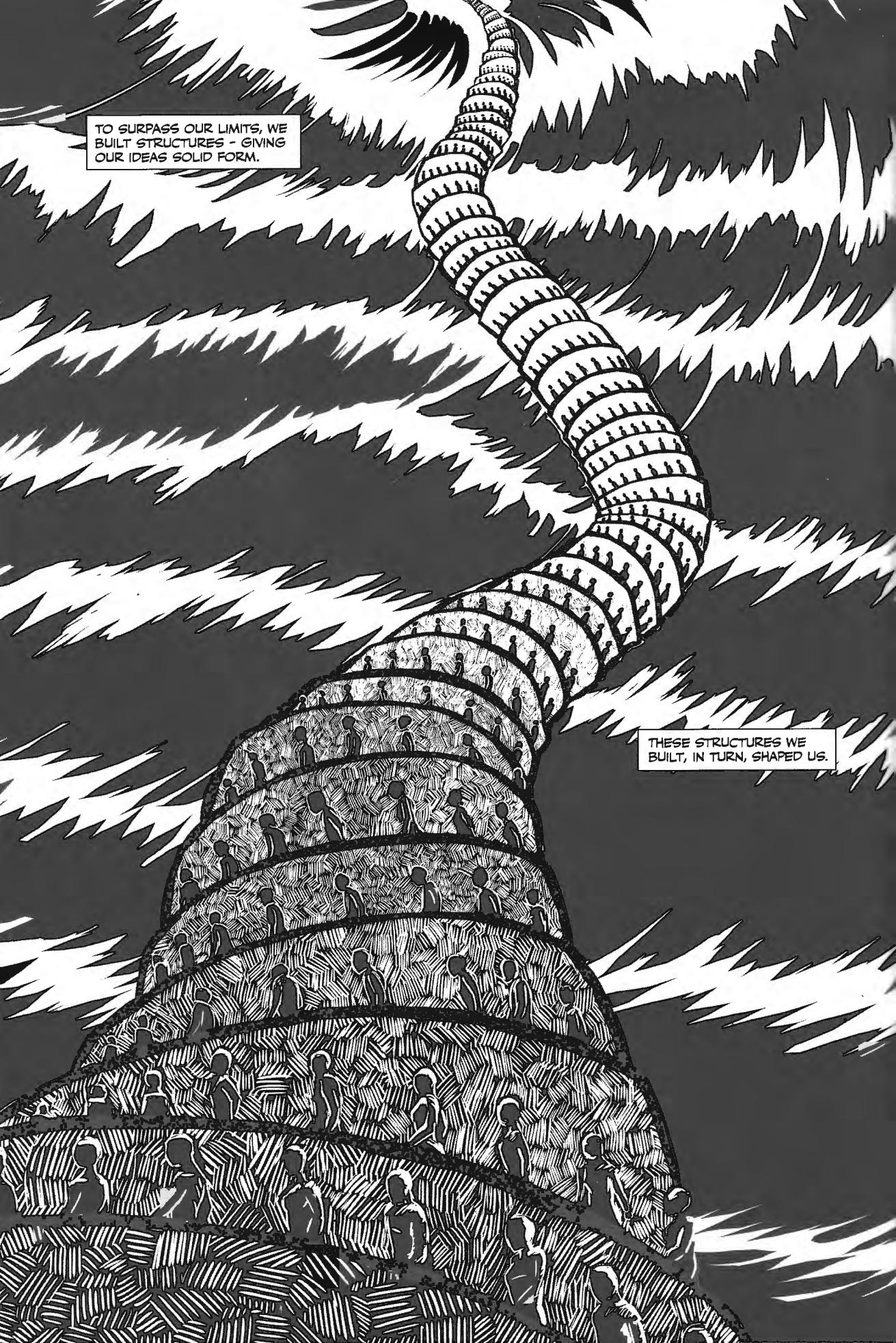
TRICKLE BECOMES STREAM;
TRIBUTARIES RUN TOGETHER,
GATHERING FORCE.

THE MARCH OF IDEAS CARVES
CHANNELS INTO THE LANDSCAPE -
IDEAS BORNE BY INDIVIDUALS WHO ARE
IN TURN SWEPT AWAY BY ITS CURRENT.

THIS RIVER IS OUR HISTORY.







TO SURPASS OUR LIMITS, WE
BUILT STRUCTURES - GIVING
OUR IDEAS SOLID FORM.

THESE STRUCTURES WE
BUILT, IN TURN, SHAPED US.

OVER TIME,

THE MEANS WE CREATED
TO TRACK CELESTIAL
AND EARTHLY ACTIVITY

WERE INVERTED,

AND BECAME WHAT LEWIS MUMFORD CALLS A
MECHANISM TO SYNCHRONIZE OUR ACTIONS.

WHEN IDEAS ARE WRITTEN IN STONE WITH THE CERTAINTY THAT WE GOT IT RIGHT,

WE RISK FOLLOWING WITHOUT REFLECTION.

UNLIKE PERSEUS, WHO NEVER LOST SIGHT OF HIMSELF,

WHEN WE STOP QUESTIONING,

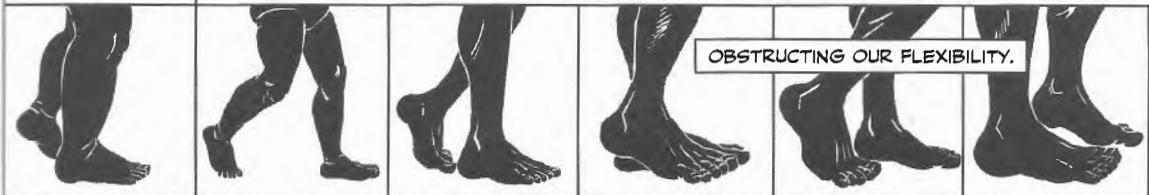
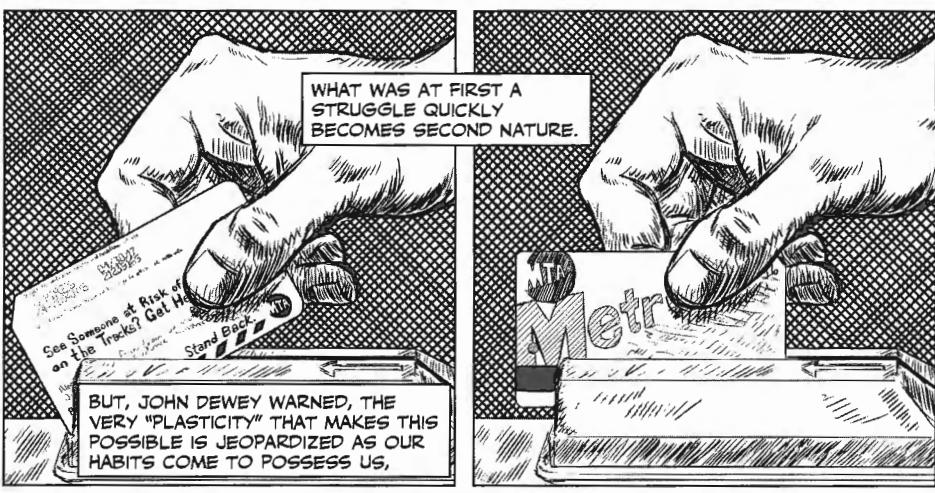
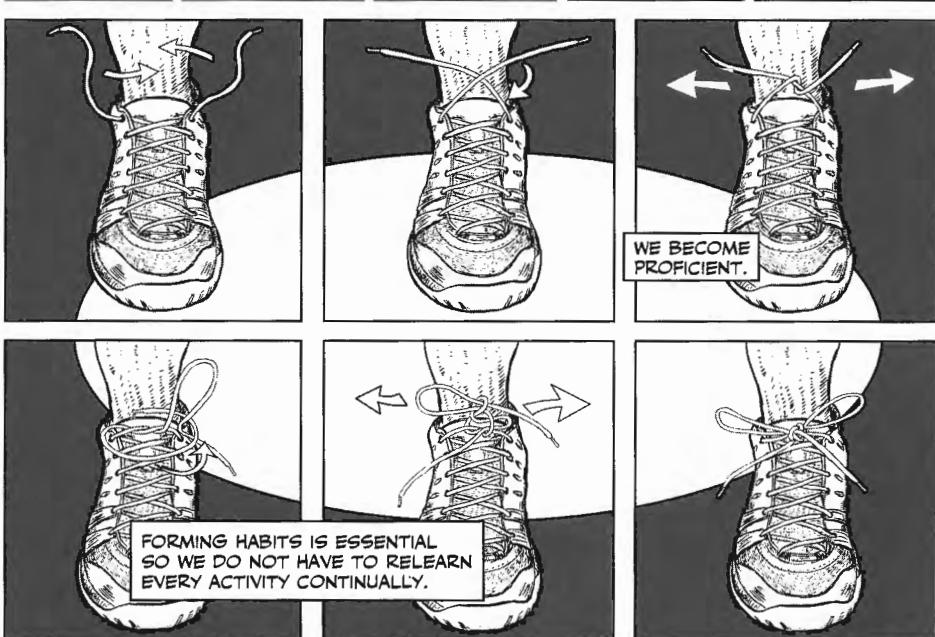
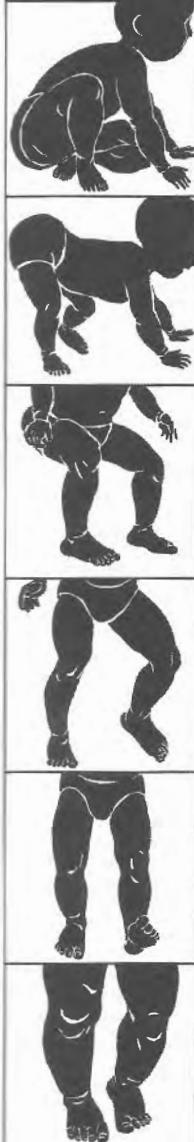
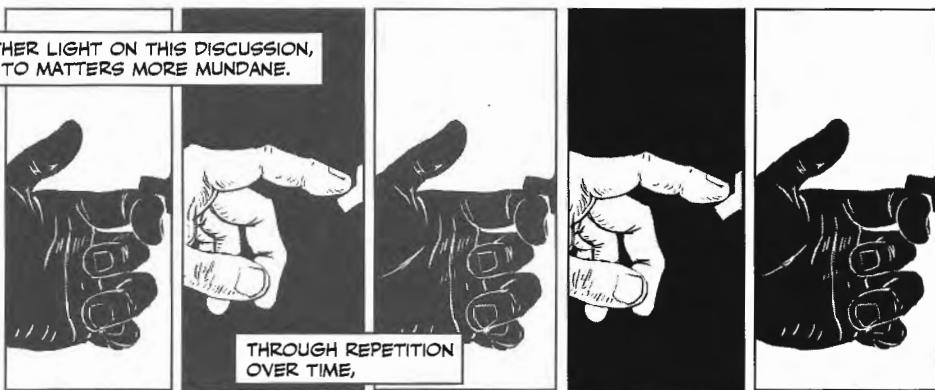
WE BECOME TRANSFIXED, AS IF BY MEDUSA'S GAZE

RENDERED INANIMATE,



FLAT.

TO SHED FURTHER LIGHT ON THIS DISCUSSION,
LET'S SWITCH TO MATTERS MORE MUNDANE.



IF A TYPICAL COMMUTE -
TRaversing the same
path time and again -
SHRINKS ONE'S WORLD,

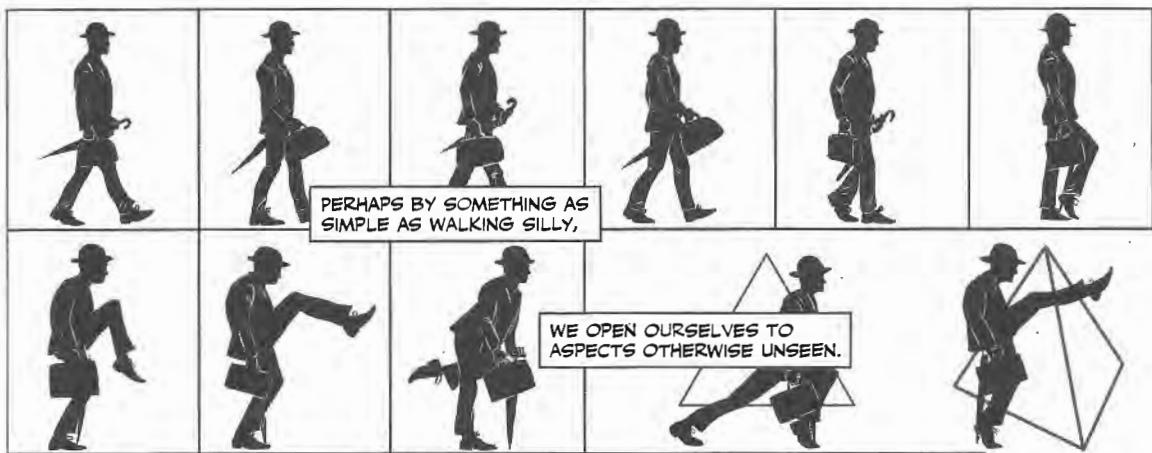
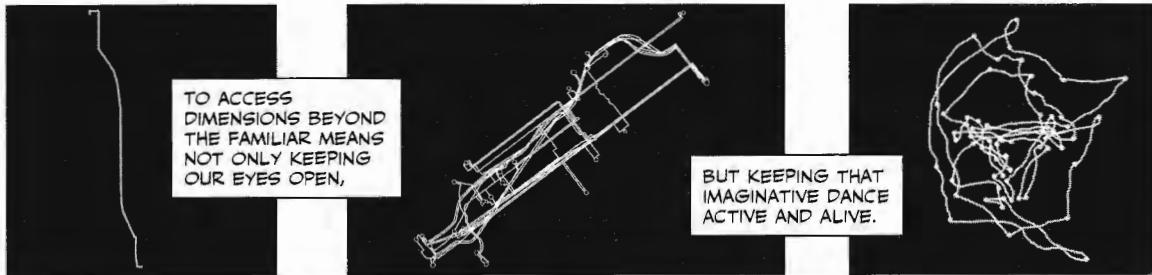
CONSIDER INSTEAD:

THE SHIFTING CONFIGURATIONS
THAT ARE MY WIFE'S DAILY
COMMUTES HELP EXPAND HER
AWARENESS.

WITH ROUTES ANYTHING BUT
ROUTINE, SHE CONSTANTLY
ENCOUNTERS DIFFERENT SIGHTS
AND MAKES NEW CONNECTIONS,

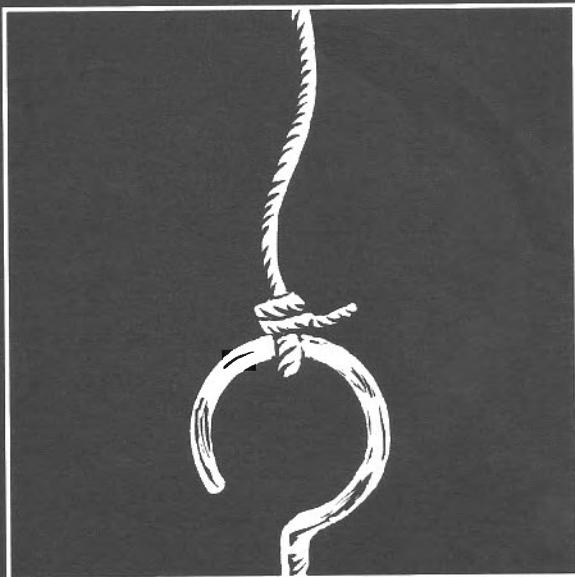
AKIN TO WHAT THE ARTISTIC MOVEMENT
KNOWN AS THE SITUATIONIST
INTERNATIONAL CALLED THE DÉRIVE -

A WALK CONCEIVED OF AS A
PLAYFUL DRIFTING RATHER THAN
A GOAL-ORIENTED JOURNEY.

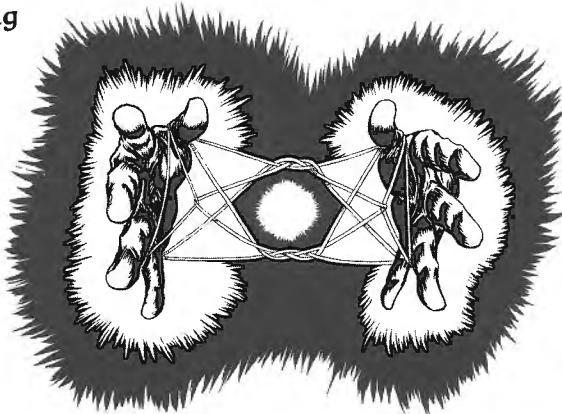


interlude

STRINGS ATTACHED



As you will recall, through the action of mentally binding and framing separate concepts, we generate new understandings.

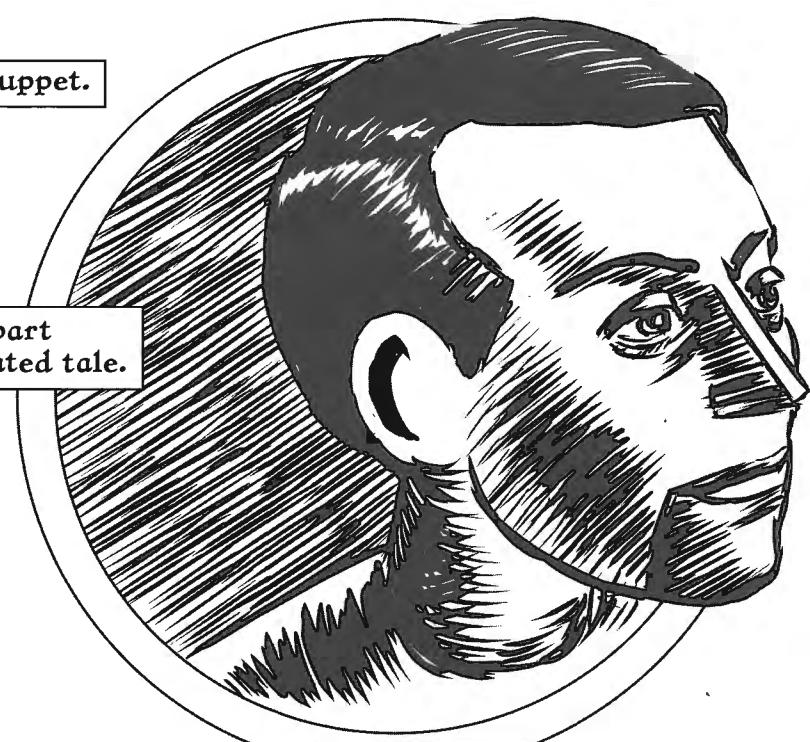


Stories provide us with such frames, opening through which to pass.

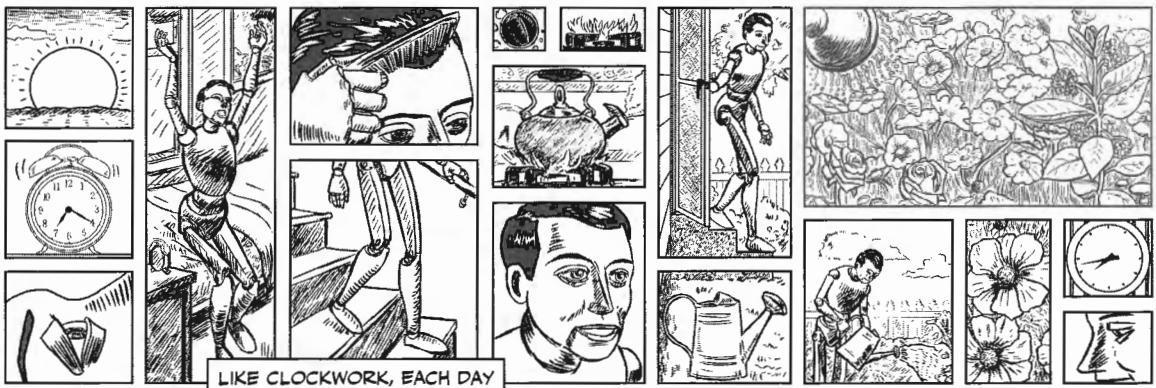
So then, imagine if you will,

a puppet.

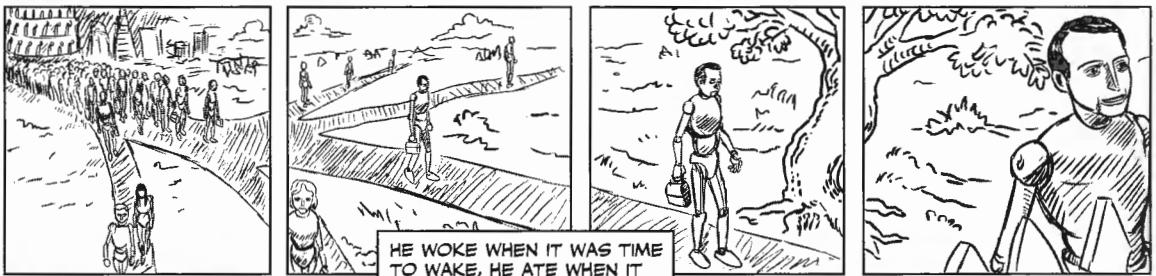
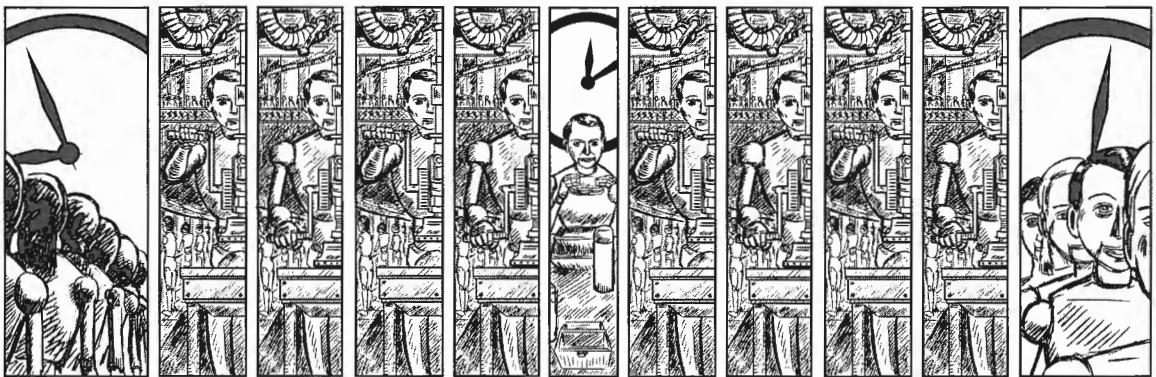
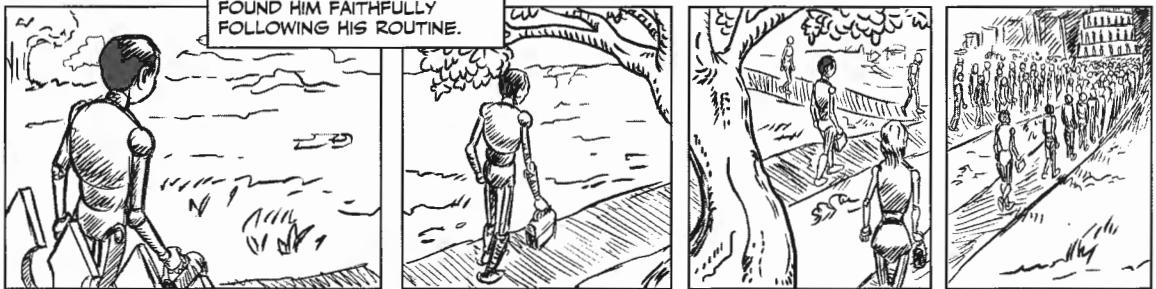
one borrowed in part from an oft-repeated tale.



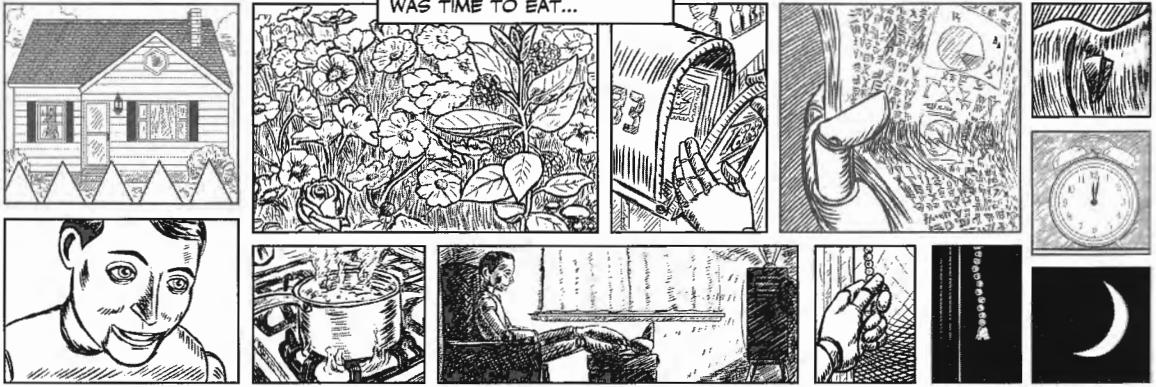
And we may see in him, despite his physical dimensionality, something akin to our flatlanders...

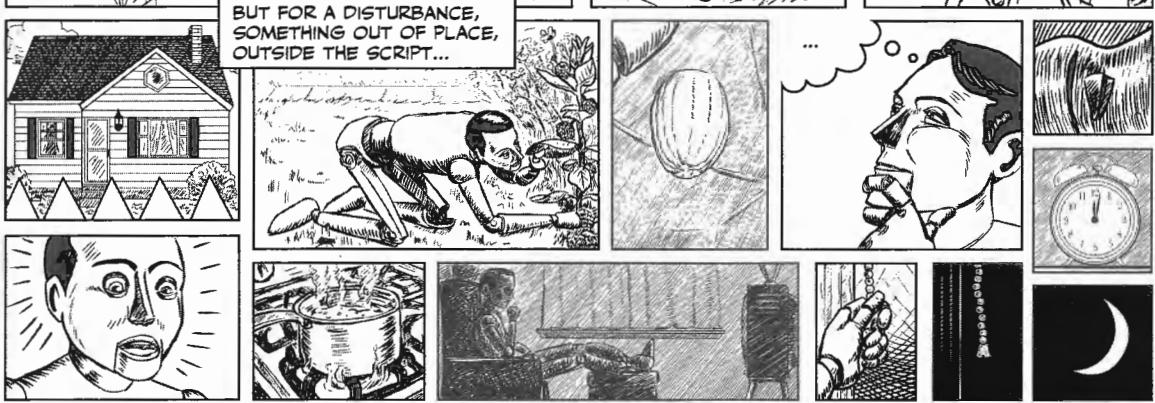
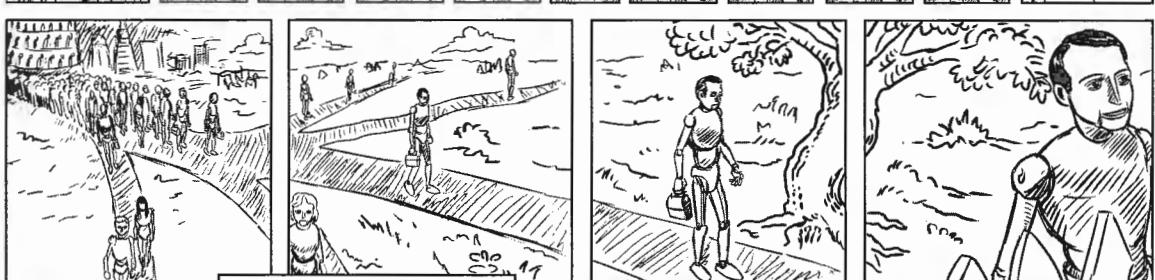
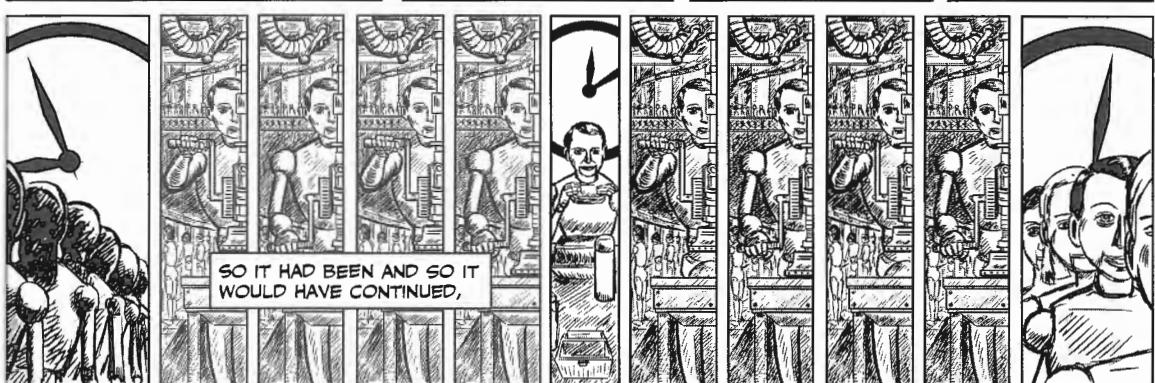
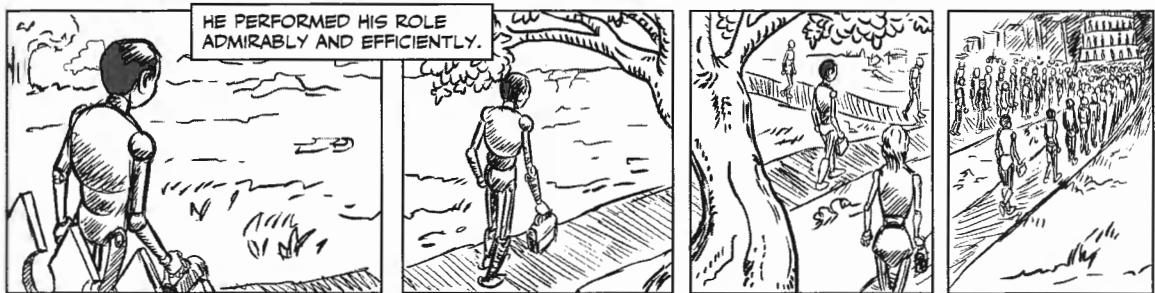
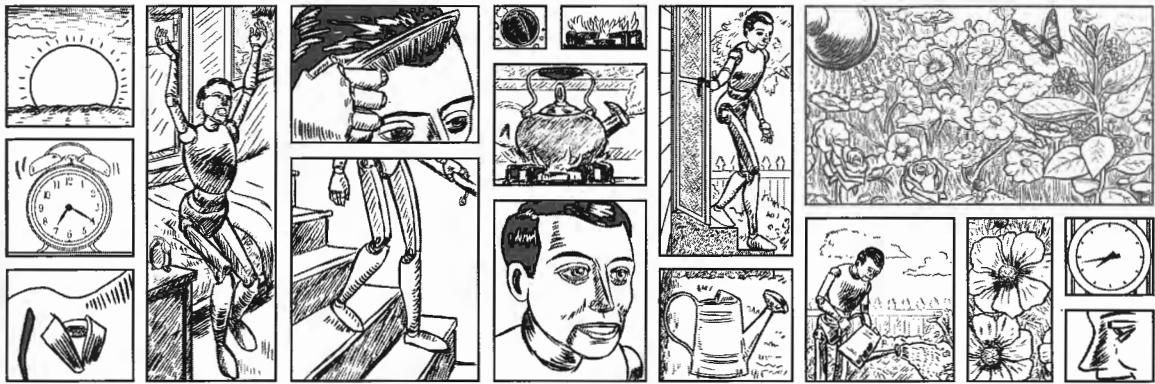


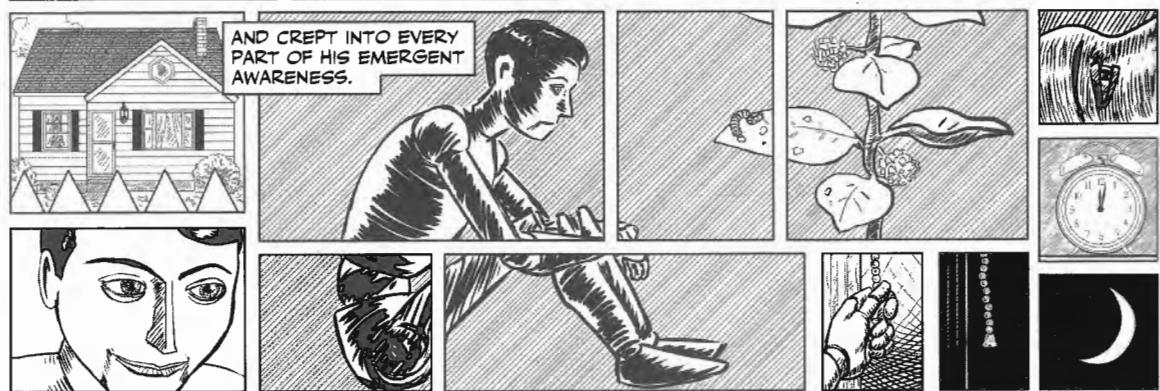
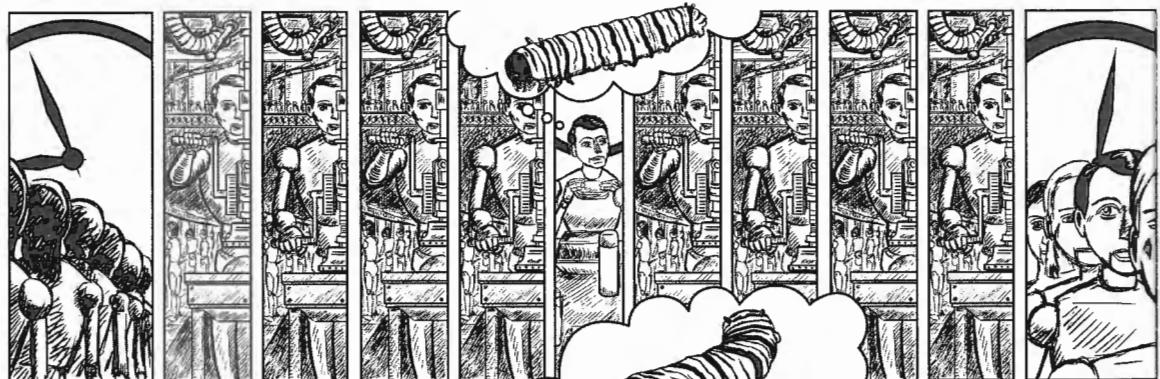
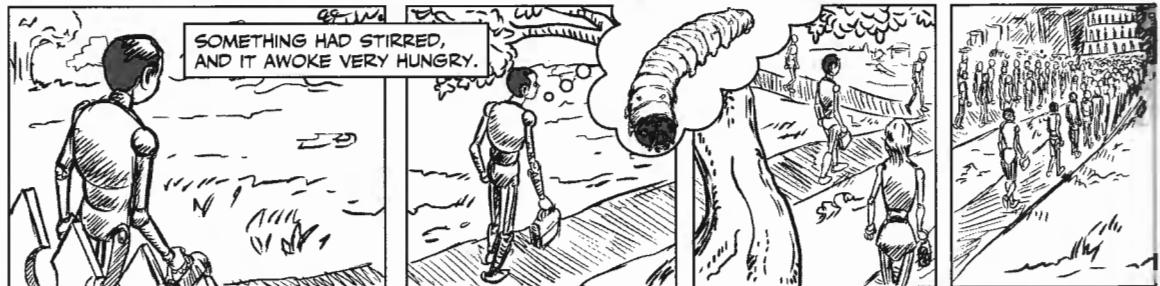
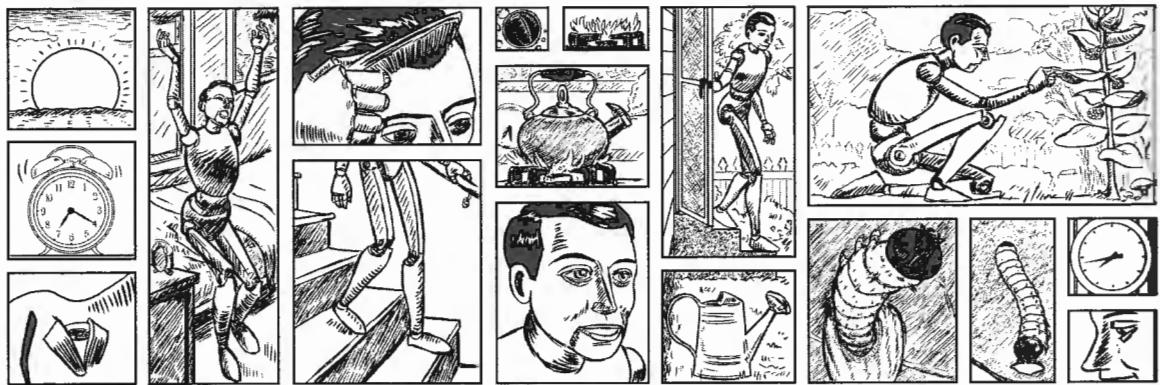
LIKE CLOCKWORK, EACH DAY
FOUND HIM FAITHFULLY
FOLLOWING HIS ROUTINE.

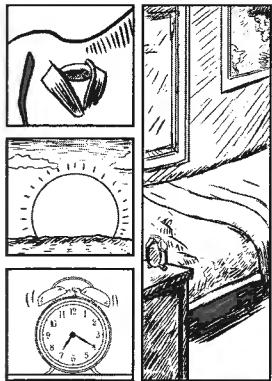


HE WOKE WHEN IT WAS TIME
TO WAKE, HE ATE WHEN IT
WAS TIME TO EAT...









WITHOUT UTTERING A WORD, THIS CURIOUS VISITOR HAD LED TO THE UPHEAVAL OF ALL HE'D HELD FAMILIAR.



UNTIL, ONE DAY, IT PAUSED AND ADDRESSED HIM,





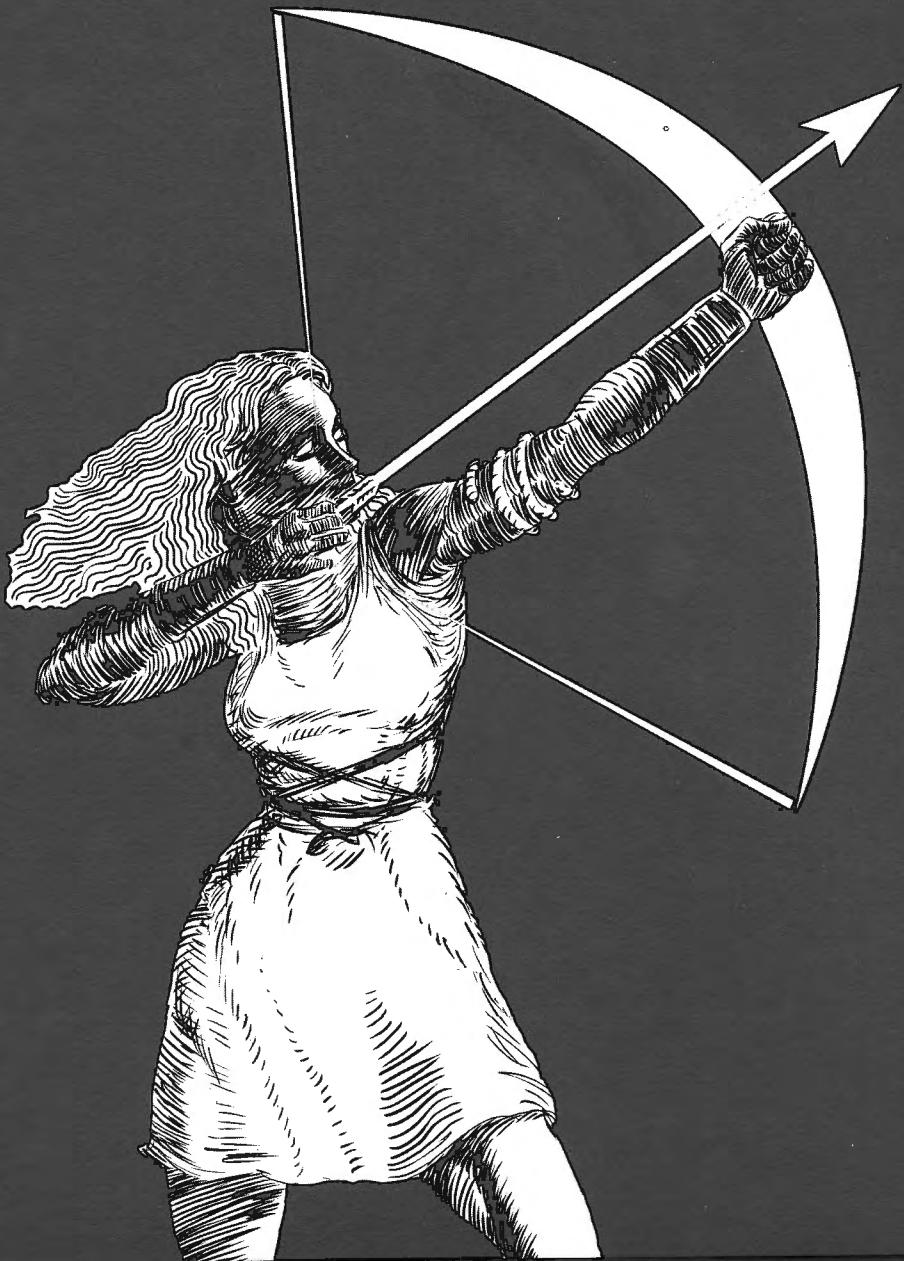
REVEALING THE PRESENCE
OF STRINGS, THAT HAD
BEEN THERE ALL ALONG.

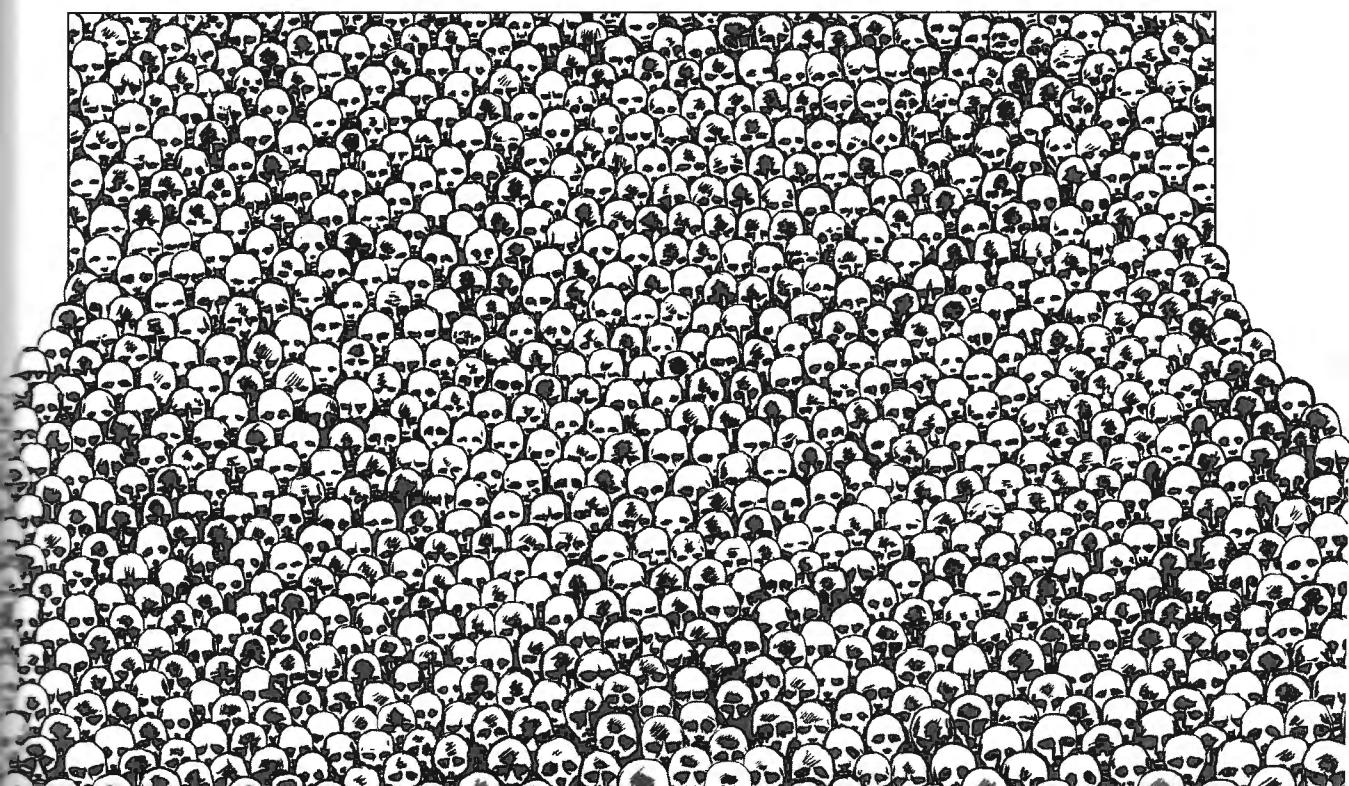
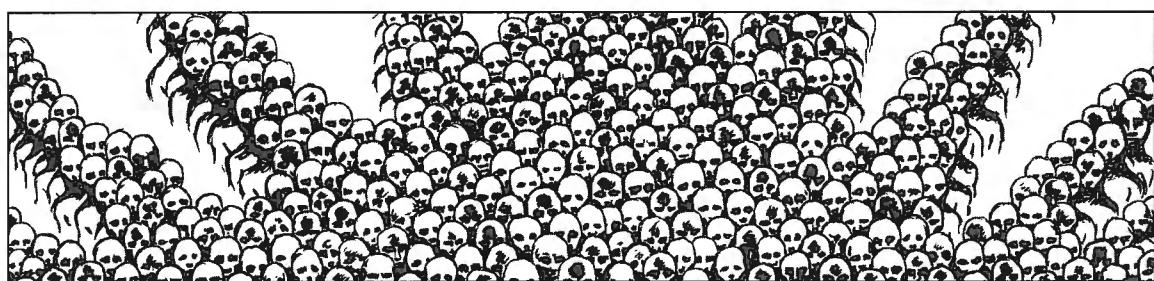
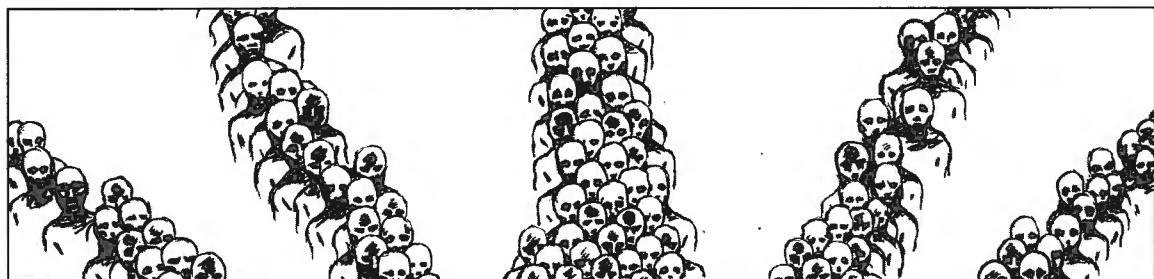
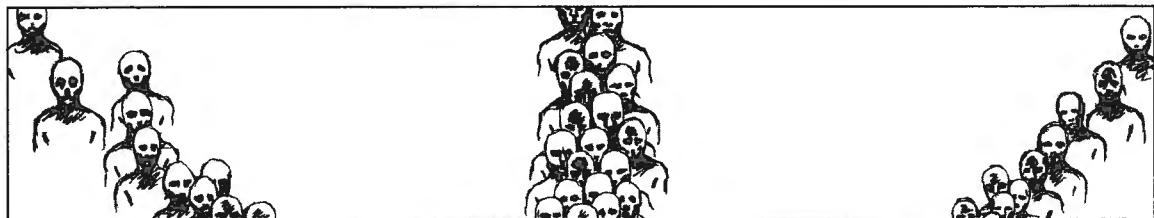
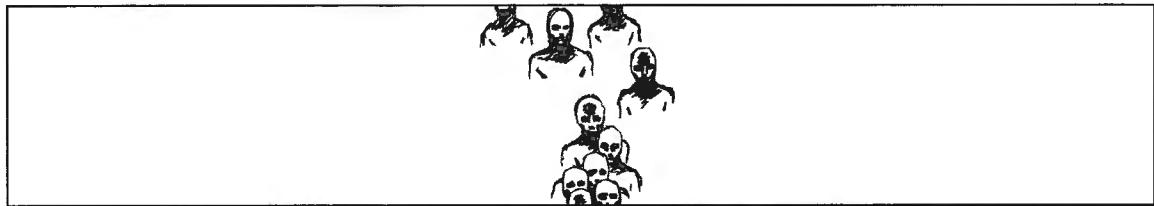


"PHILOSOPHY BEGINS IN WONDER."
- ALFRED NORTH WHITEHEAD

seven

VECTORS

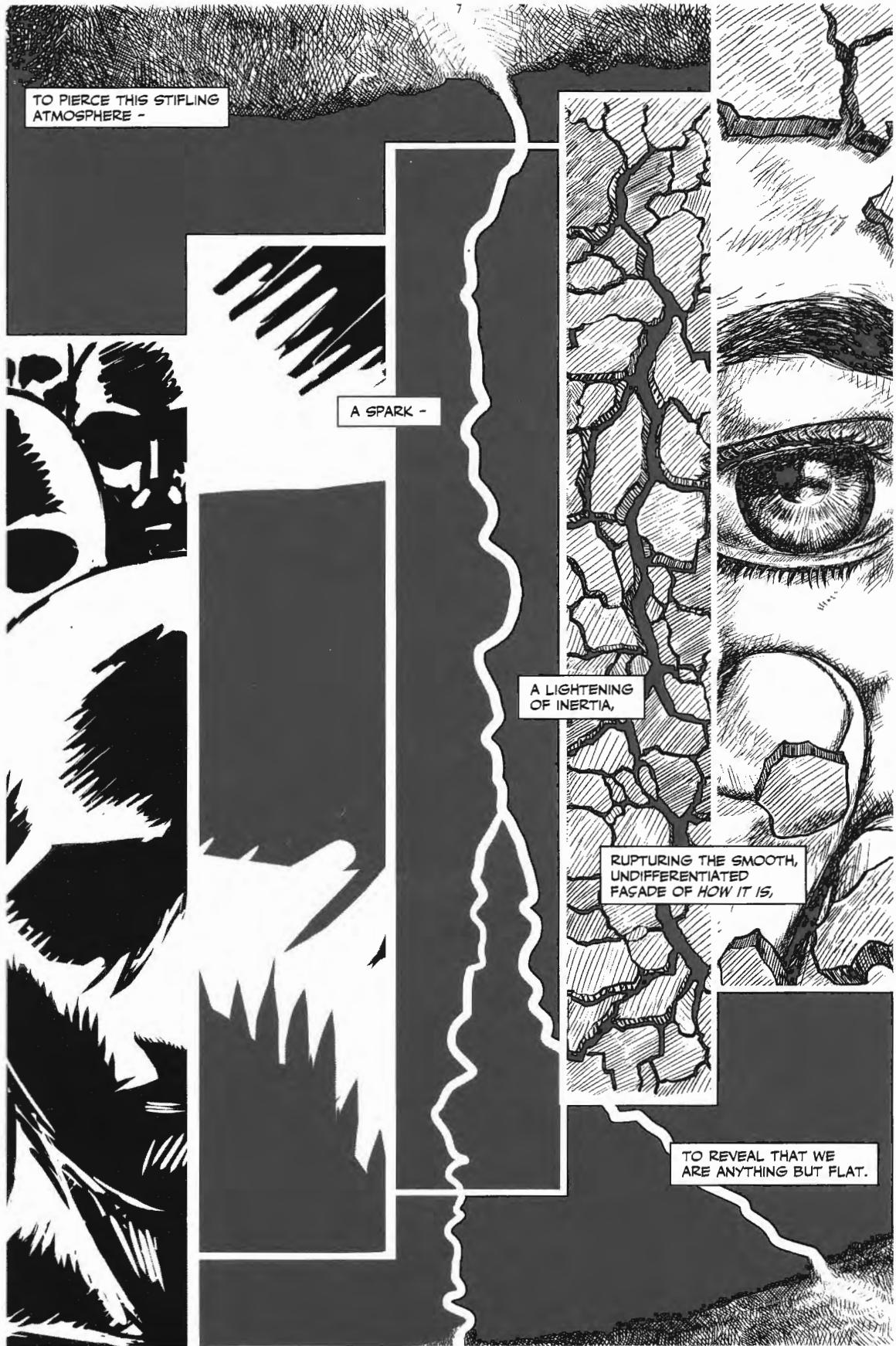


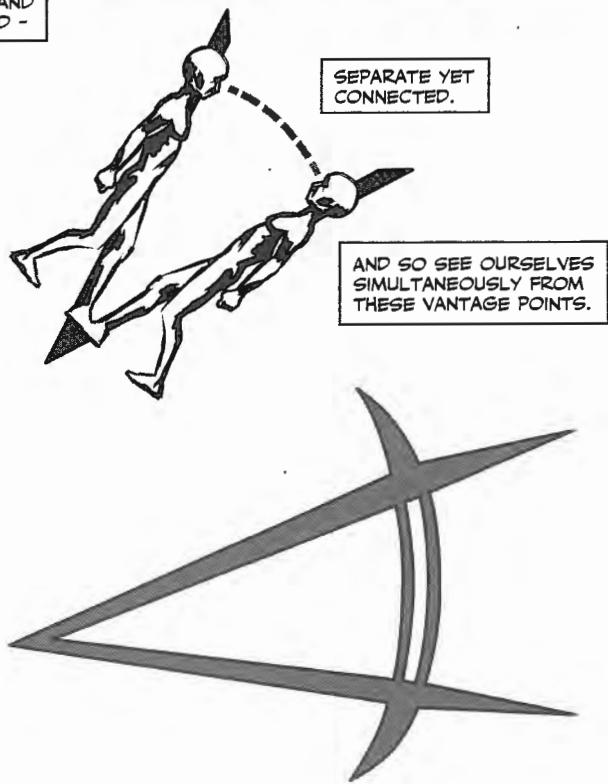
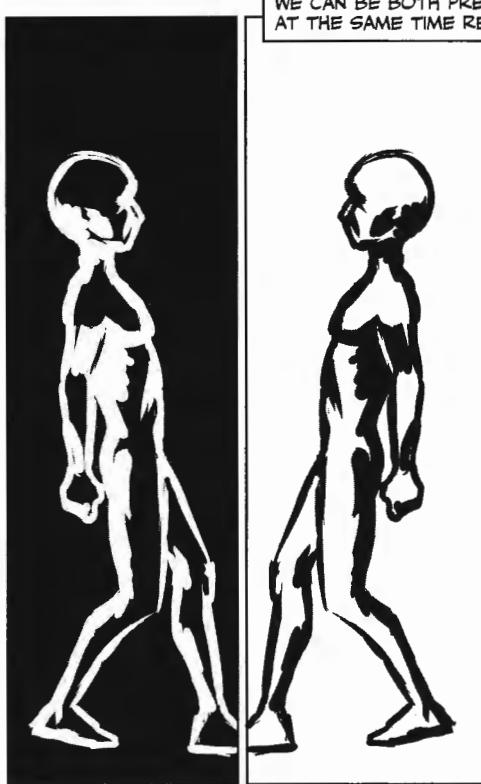




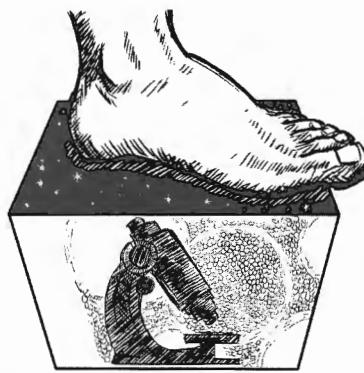
THE INANIMATE CHORUS...

MARCHES ON.

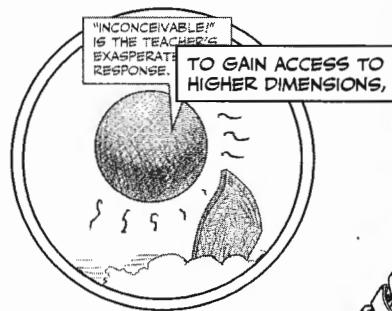




THROUGH LENSES BOTH CONCEPTUAL AND MECHANICAL, WE'VE EXTENDED OUR SIGHT,



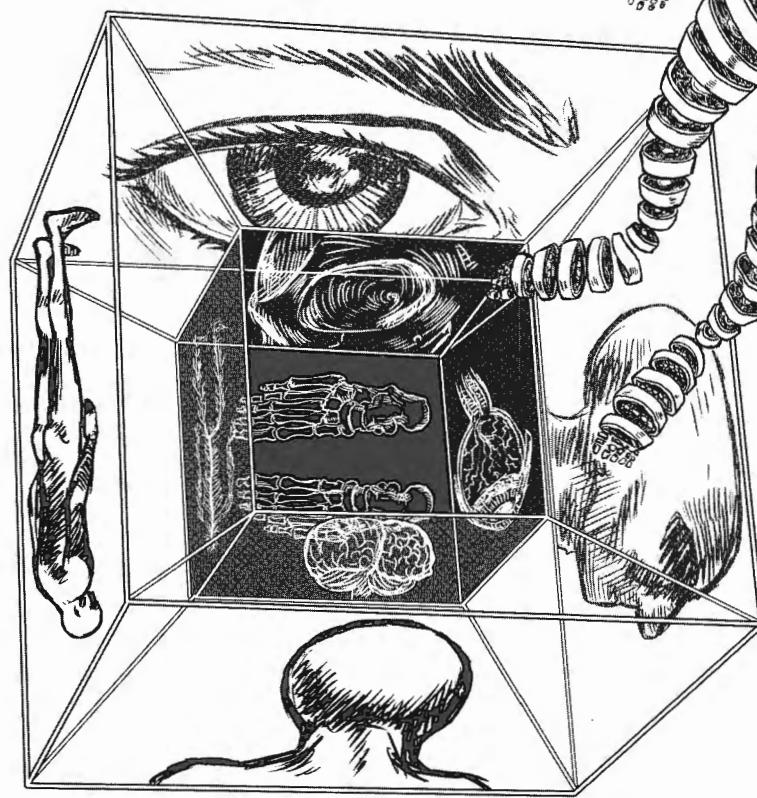
ENABLING US TO STEP OUT STILL FARTHER



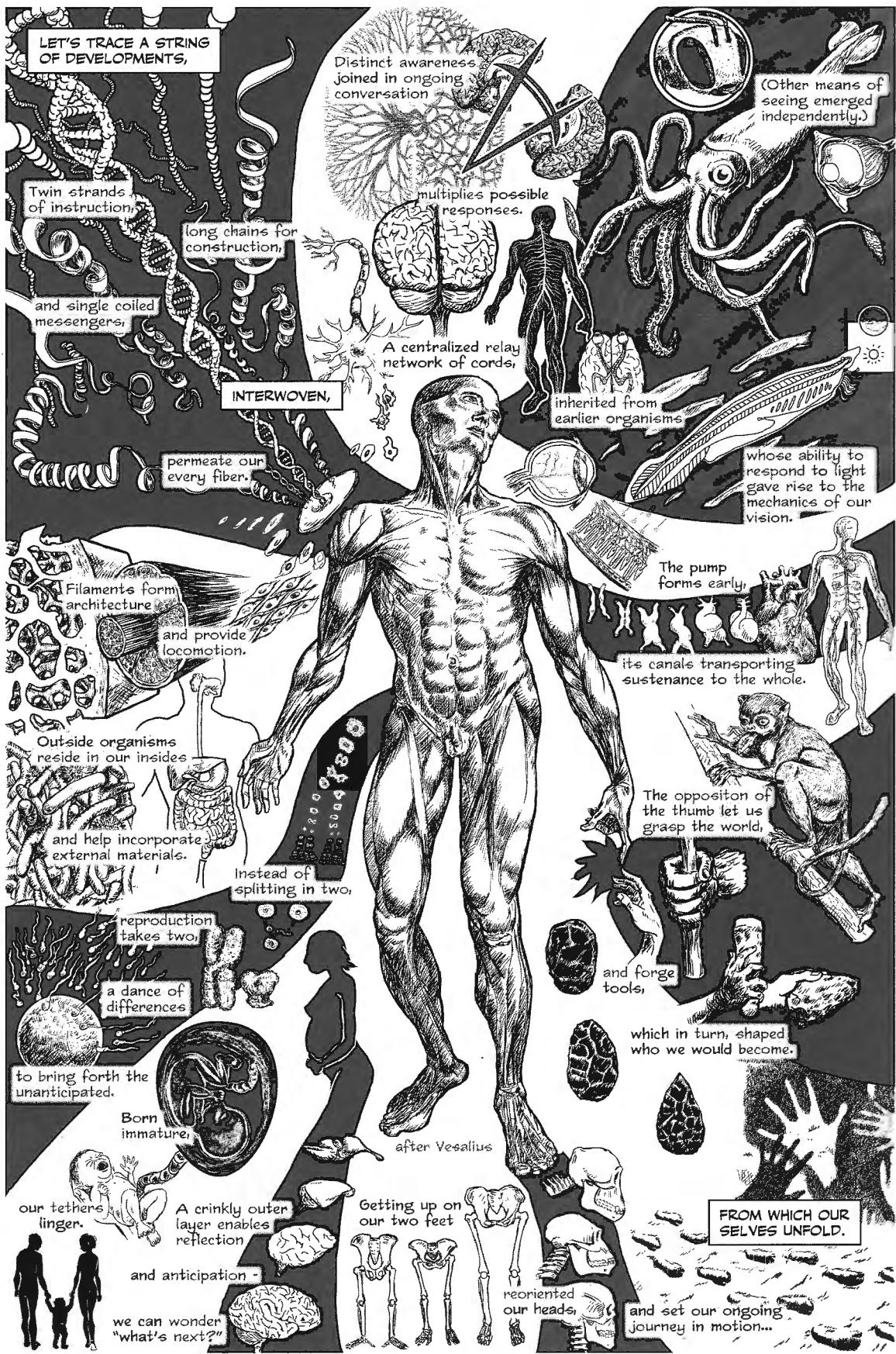
TO GAIN ACCESS TO HIGHER DIMENSIONS,



FROM WHICH WE CAN (DESPITE THE SPHERE'S DENIAL), SEE OUR INSIDES,



AND BEGIN TO GET AT WHAT MAKES US WHO WE ARE.



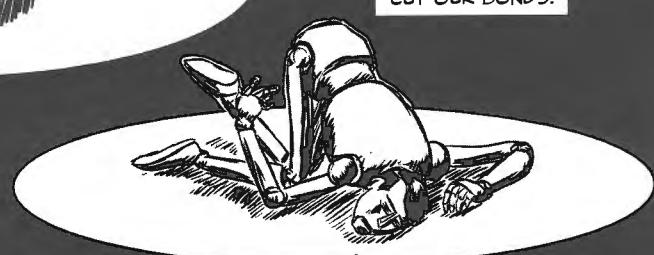


OUR EXPERIENCES
AND INTERACTIONS.

ALL SHAPE OUR IDENTITY.



TO SET
OURSELVES FREE,



WE CAN'T SIMPLY
CUT OUR BONDS.



FOR TO REMOVE THEM
(IF WE COULD) WOULD
ONLY SET US ADRIFT,



DETACHED FROM THE
VERY THINGS THAT
MAKE US WHO WE ARE.



EMANCIPATION, BRUNO LATOUR WRITES, "DOES NOT MEAN 'FREED FROM BONDS' BUT WELL-ATTACHED."

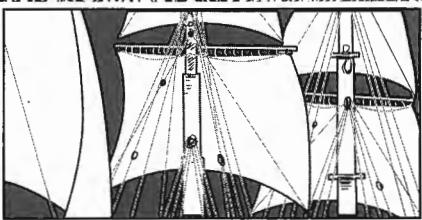


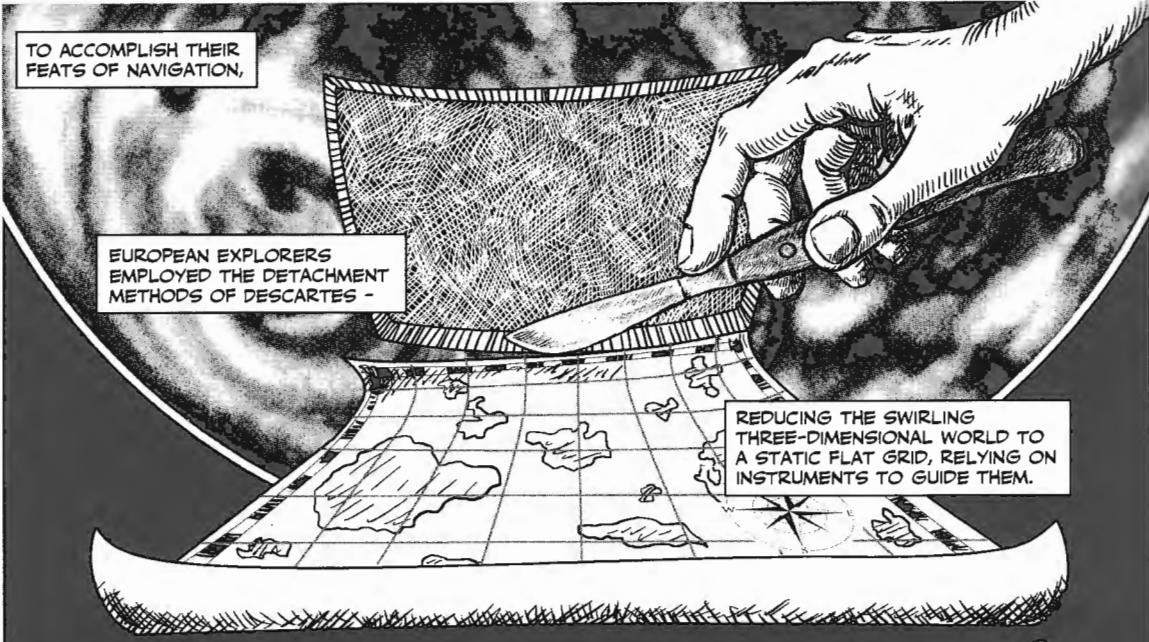
THE STRINGS STAY ON.

BY IDENTIFYING MORE THREADS OF ASSOCIATION,



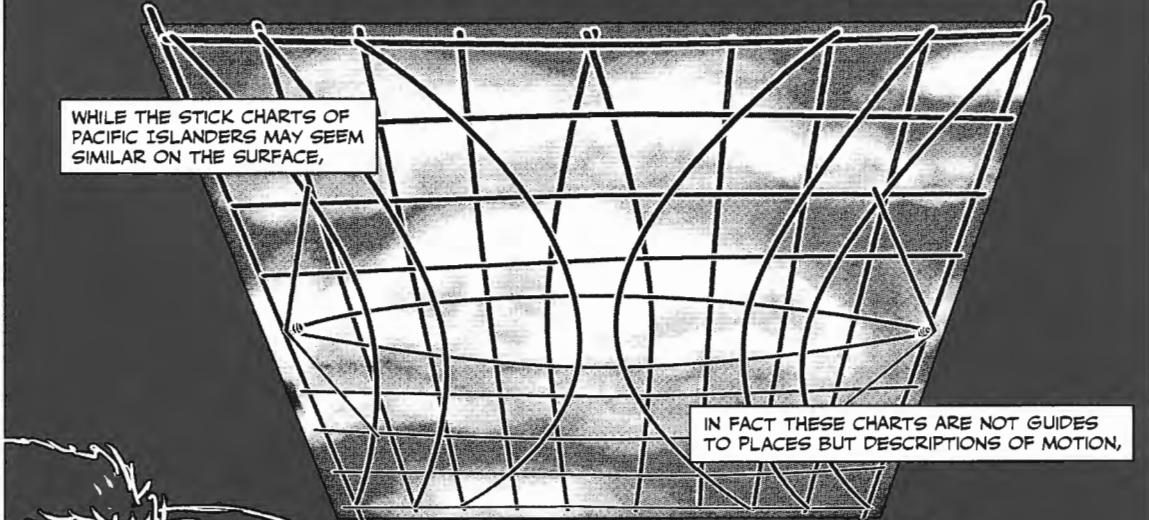
WE ARE BETTER ABLE TO SEE THESE ATTACHMENTS NOT AS CONSTRAINTS BUT AS FORCES TO HARNESS.





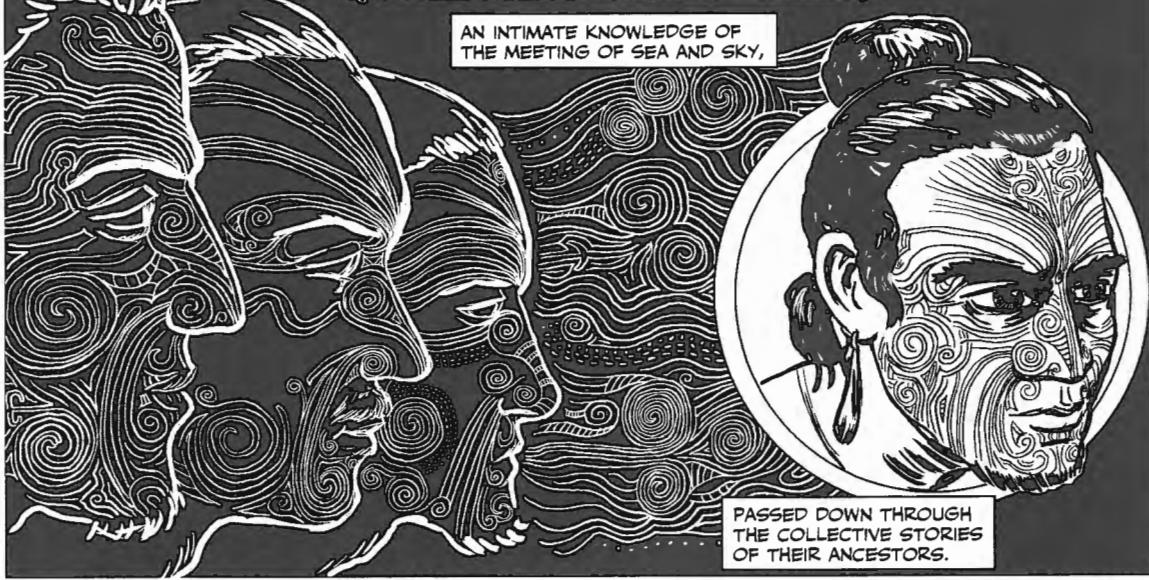
TO ACCOMPLISH THEIR FEATS OF NAVIGATION,
EUROPEAN EXPLORERS EMPLOYED THE DETACHMENT METHODS OF DESCARTES -

REDUCING THE SWIRLING THREE-DIMENSIONAL WORLD TO A STATIC FLAT GRID, RELYING ON INSTRUMENTS TO GUIDE THEM.



WHILE THE STICK CHARTS OF PACIFIC ISLANDERS MAY SEEM SIMILAR ON THE SURFACE,

IN FACT THESE CHARTS ARE NOT GUIDES TO PLACES BUT DESCRIPTIONS OF MOTION,



AN INTIMATE KNOWLEDGE OF THE MEETING OF SEA AND SKY,

PASSED DOWN THROUGH THE COLLECTIVE STORIES OF THEIR ANCESTORS.

IMMersed in the
COMPLEXITY OF
THEIR ENVIRONMENT,

STARS,

BIRDS,

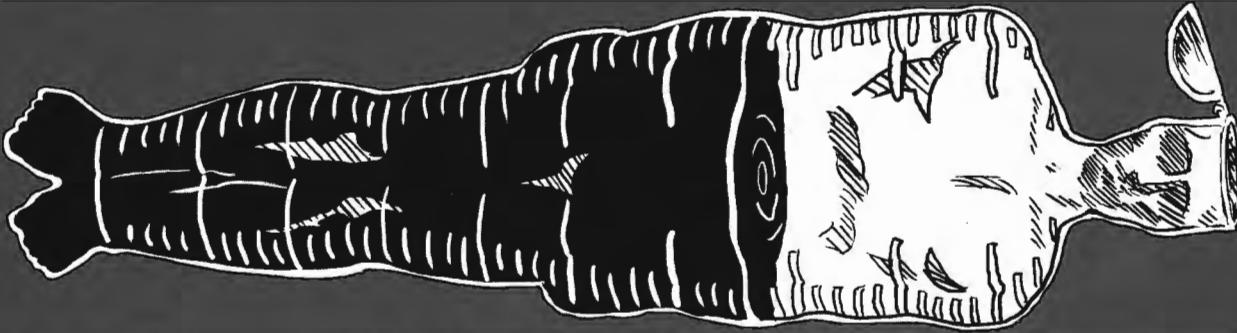
PATTERNS IN THE
WIND AND WAVES,

FRONTS AND SWELLS,

THE ILLUMINATING
PRESENCE OF
UNDERSEA LIFE,

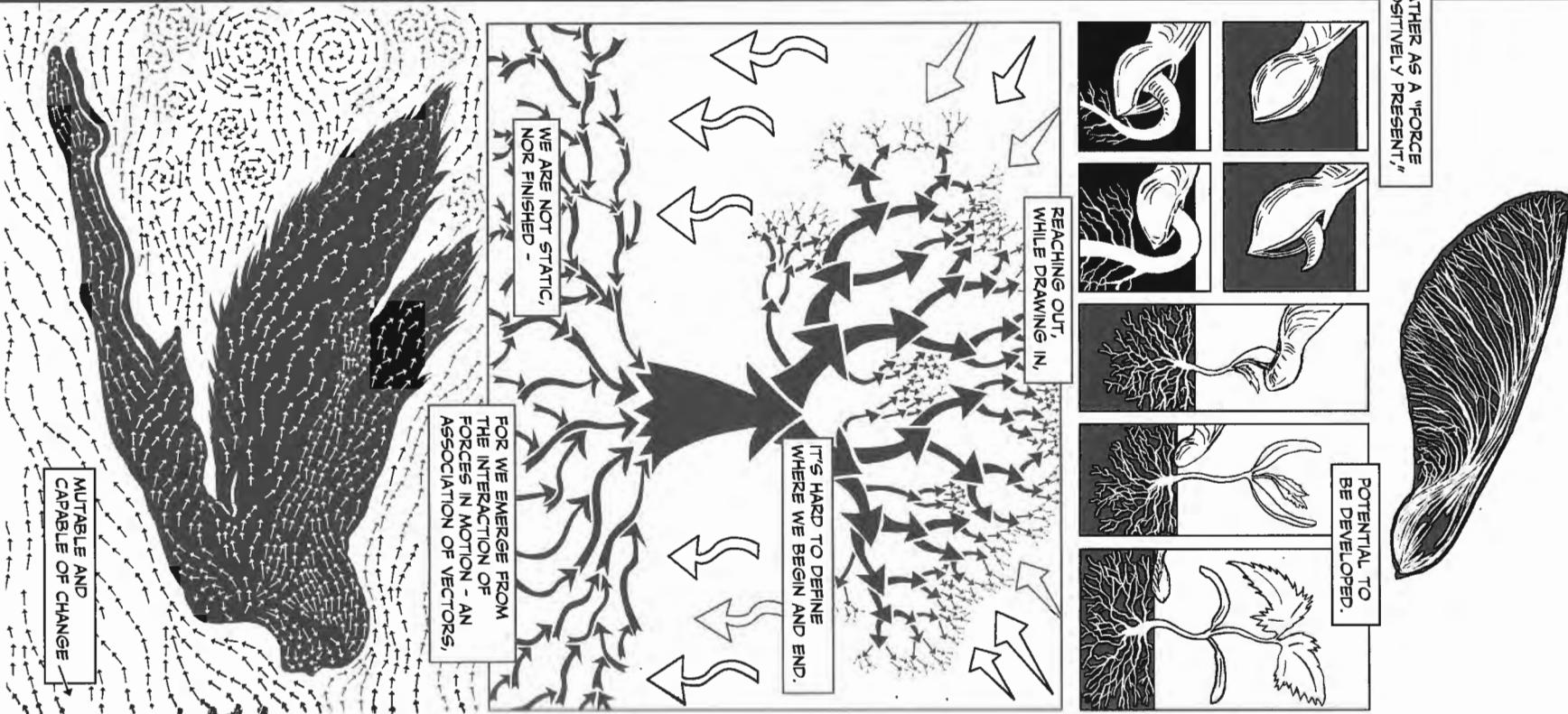
EVERYTHING OFFERED
A LIVING SIGN.

ATTUNED TO THESE
INVISIBLE TRACES -
VECTORS - THEY
FOUND THEIR WAY.



LET'S THEN REFLECT ONCE MORE ON WHAT MAKES US WHO WE ARE. JOHN DEWEY DEFINED CAPACITY NOT AS AN EMPTYNESS TO BE FILLED FROM AN OUTSIDE SOURCE,

RATHER AS A "FORCE POSITIVELY PRESENT,"



YOUR CHILDREN ARE NOT YOUR CHILDREN.
THEY ARE THE SONS AND DAUGHTERS OF LIFE'S LONGING FOR ITSELF.

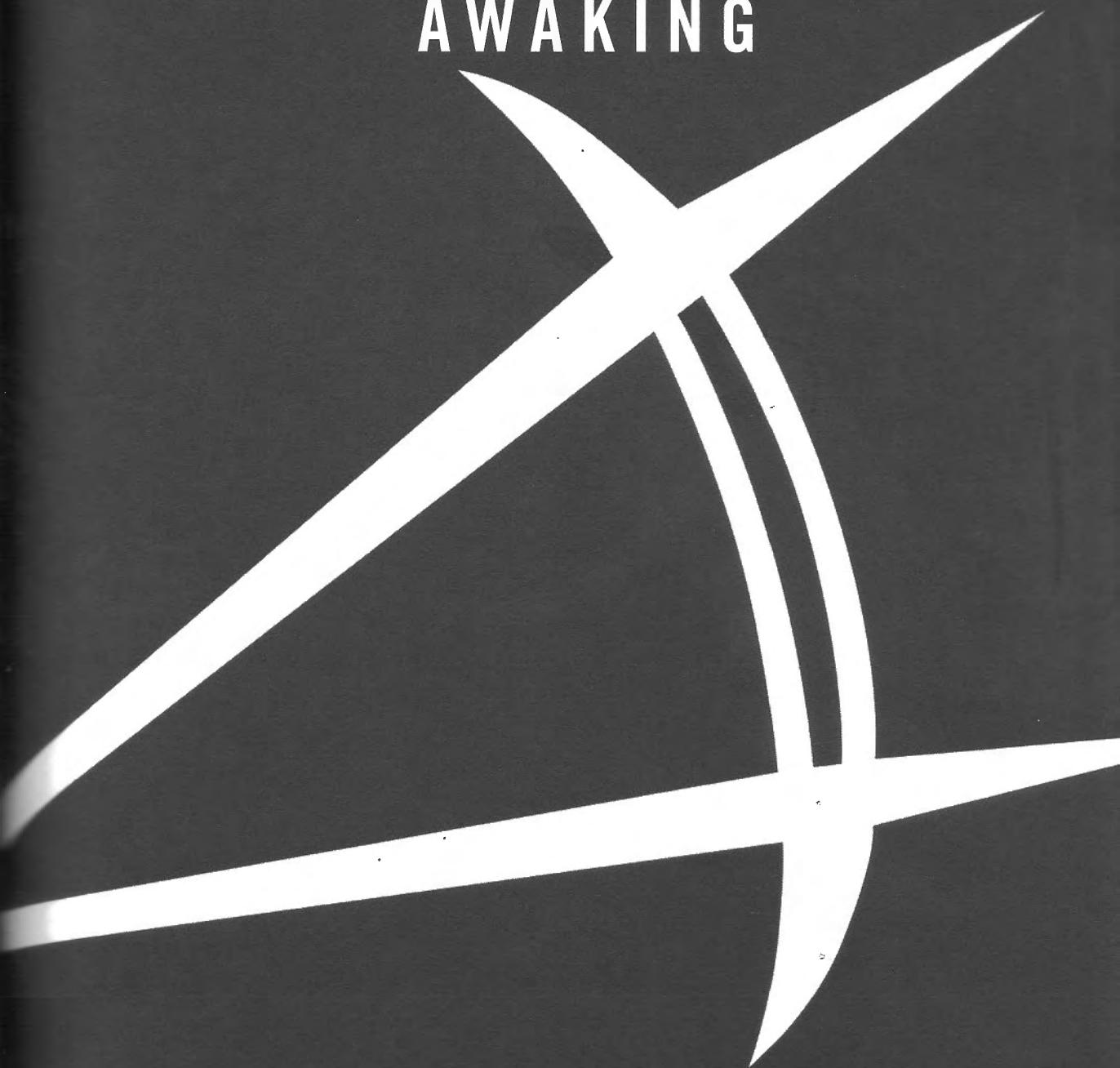
...

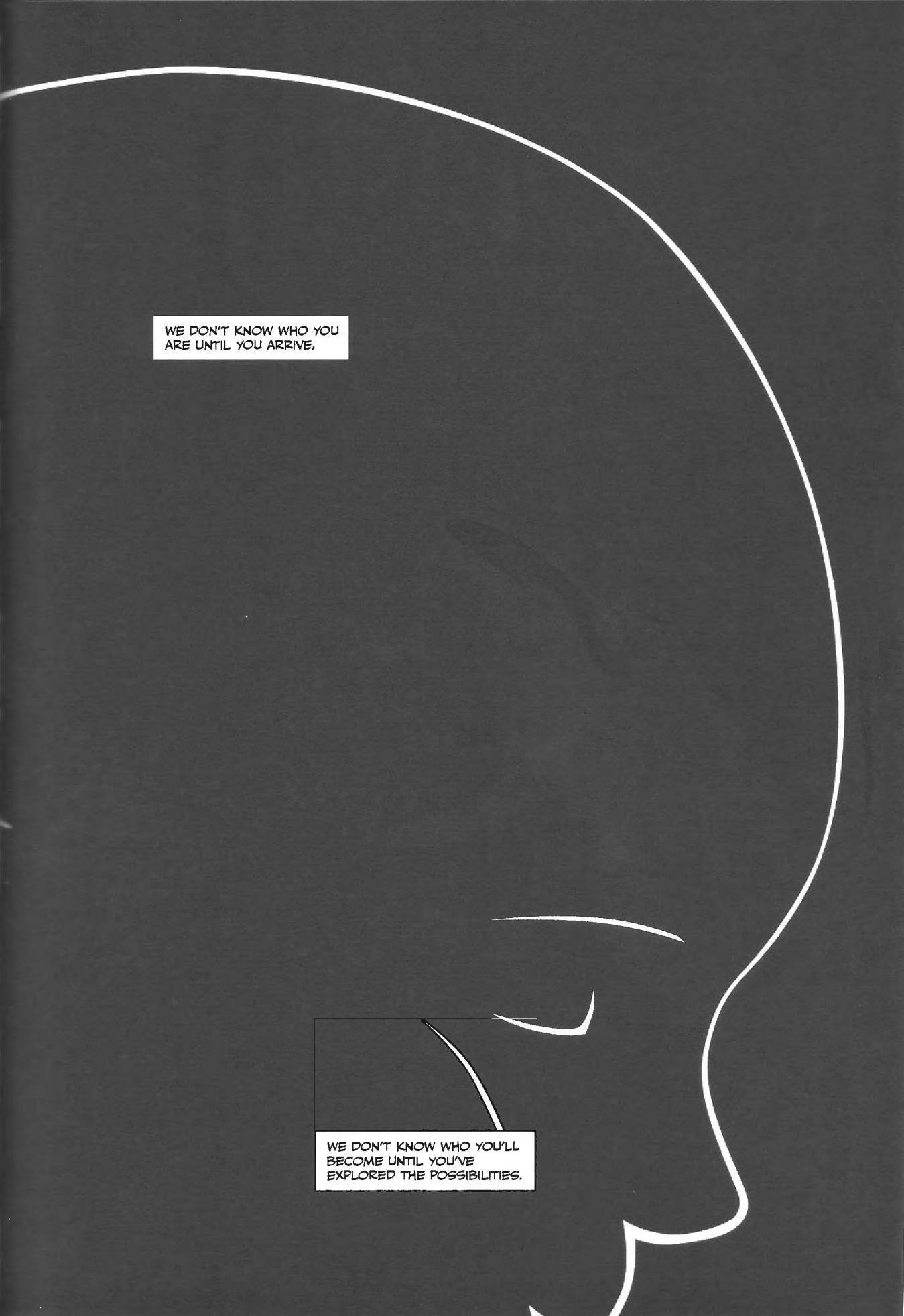


...
YOU ARE THE BOWS FROM WHICH YOUR CHILDREN
AS LIVING ARROWS ARE SENT FORTH. - KAHIL GIBRAN

eight

AWAKING





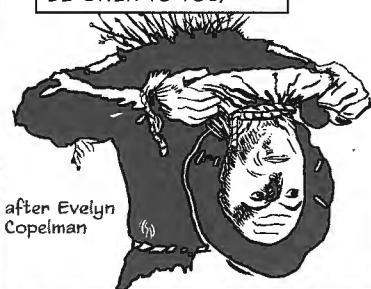
WE DON'T KNOW WHO YOU
ARE UNTIL YOU ARRIVE,

WE DON'T KNOW WHO YOU'LL
BECOME UNTIL YOU'VE
EXPLORED THE POSSIBILITIES.

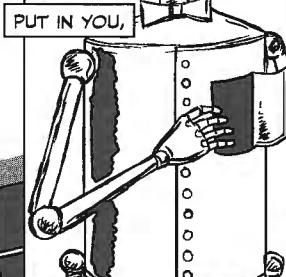


YET TOO OFTEN WE FALL FOR THE DECEPTION THAT THE POWER TO DETERMINE WHO YOU ARE AND YOUR PATH AHEAD ARE NOT IN YOUR HANDS, BUT SUBJECT TO EXTERNAL FORCES.

THAT YOUR THINKING IS SOMETHING THAT MUST BE GIVEN TO YOU,



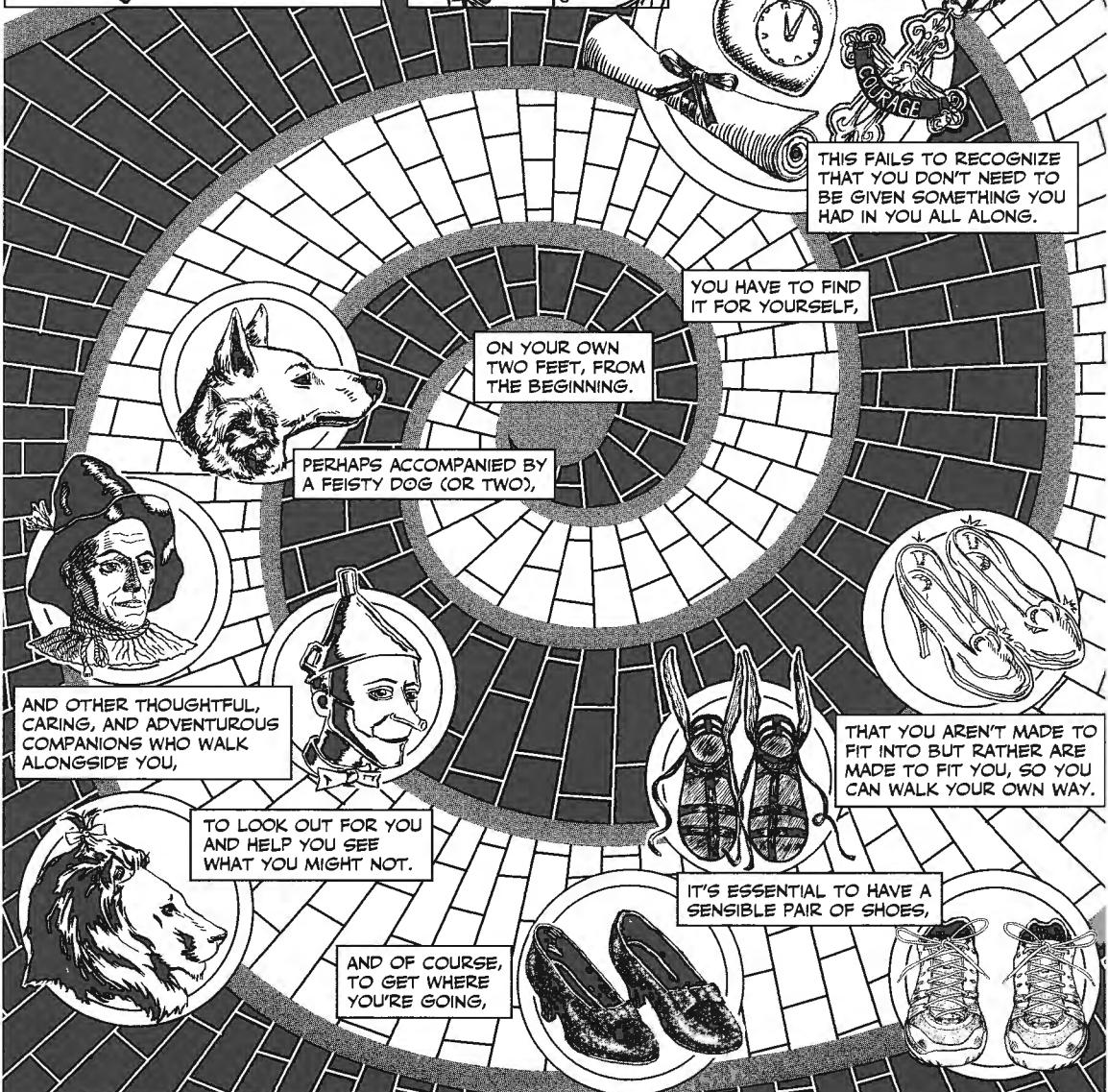
PUT IN YOU,



A RECIPE TO FILL YOU UP,



VALIDATED BY DIPLOMAS, TESTIMONIALS, AND BADGES.



THIS FAILS TO RECOGNIZE THAT YOU DON'T NEED TO BE GIVEN SOMETHING YOU HAD IN YOU ALL ALONG.

YOU HAVE TO FIND IT FOR YOURSELF,

ON YOUR OWN TWO FEET, FROM THE BEGINNING.

PERHAPS ACCOMPANIED BY A FEISTY DOG (OR TWO),



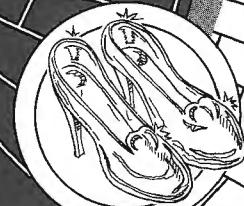
AND OTHER THOUGHTFUL, CARING, AND ADVENTUROUS COMPANIONS WHO WALK ALONGSIDE YOU,



TO LOOK OUT FOR YOU AND HELP YOU SEE WHAT YOU MIGHT NOT.



AND OF COURSE, TO GET WHERE YOU'RE GOING,



THAT YOU AREN'T MADE TO FIT INTO BUT RATHER ARE MADE TO FIT YOU, SO YOU CAN WALK YOUR OWN WAY.

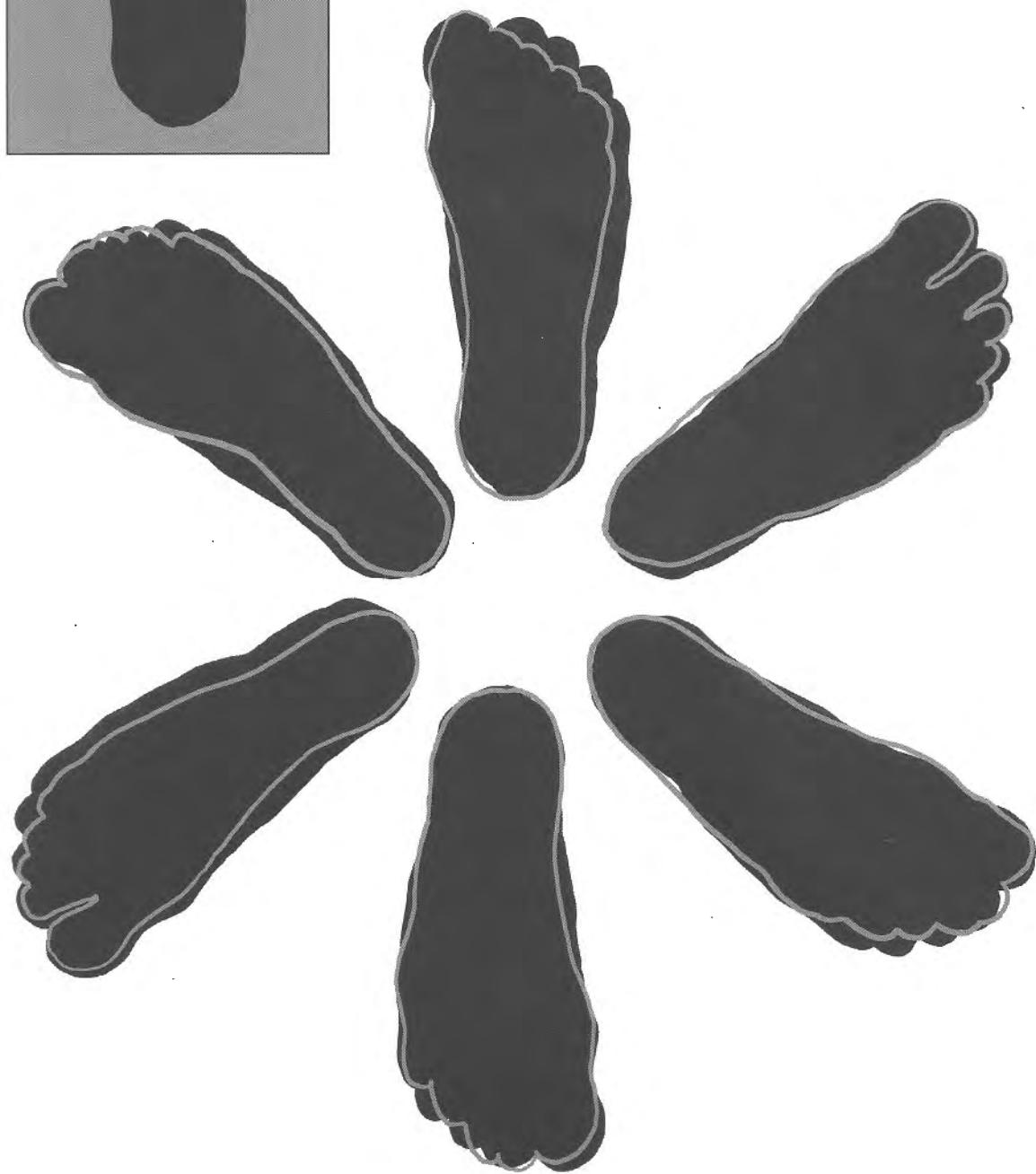


IT'S ESSENTIAL TO HAVE A SENSIBLE PAIR OF SHOES,



LET ME OFFER AS EXAMPLE, MY OWN FOOT,
ALONGSIDE THE OUTLINES OF OTHERS WHO
ALL WEAR THE SAME MEN'S SIZE 10 1/2.

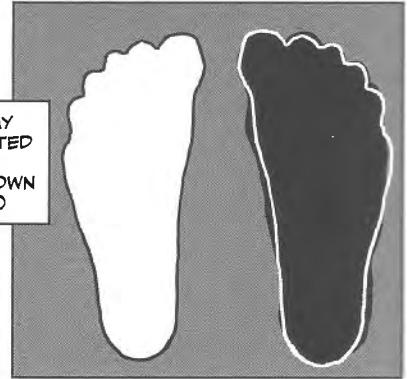
THE GREAT VARIANCE BETWEEN MY FOOT
AND THESE (AND BETWEEN ONE ANOTHER),
DESPITE ALL BEING CLASSIFIED AS THE
SAME SIZE, ILLUMINATES MY DIFFICULTY IN
FINDING SHOES THAT FIT.



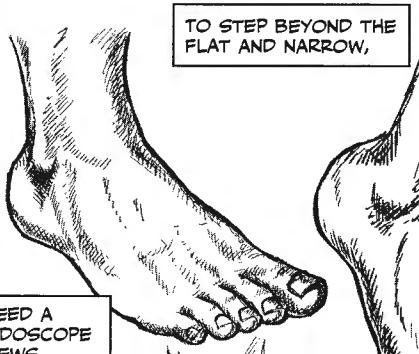


AND THIS TAKES INTO ACCOUNT
ONLY ONE SINGLE PLANE OF
MY FOOT IN A STATIC POSITION.

(NOT TO MENTION MY
LEFT FOOT, REFLECTED
ONTO MY RIGHT, WE
SEE HOW EVEN MY OWN
TWO FEET DIVERGE.)



WE NEED A
KALEIDOSCOPE
OF VIEWS,



TO STEP BEYOND THE
FLAT AND NARROW,



THAT CONVEY BOTH OUR
DIMENSIONALITY AND
DYNAMIC CAPABILITY.



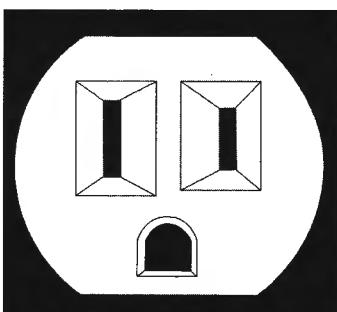
TO IGNORE OUR DIFFERENCES
AND THE CONFIGURATION OF
THREADS FROM WHICH WE ARE
UNIQUELY COMPOSED ROBS US
OF OUR INHERENT NIMBLENESS.

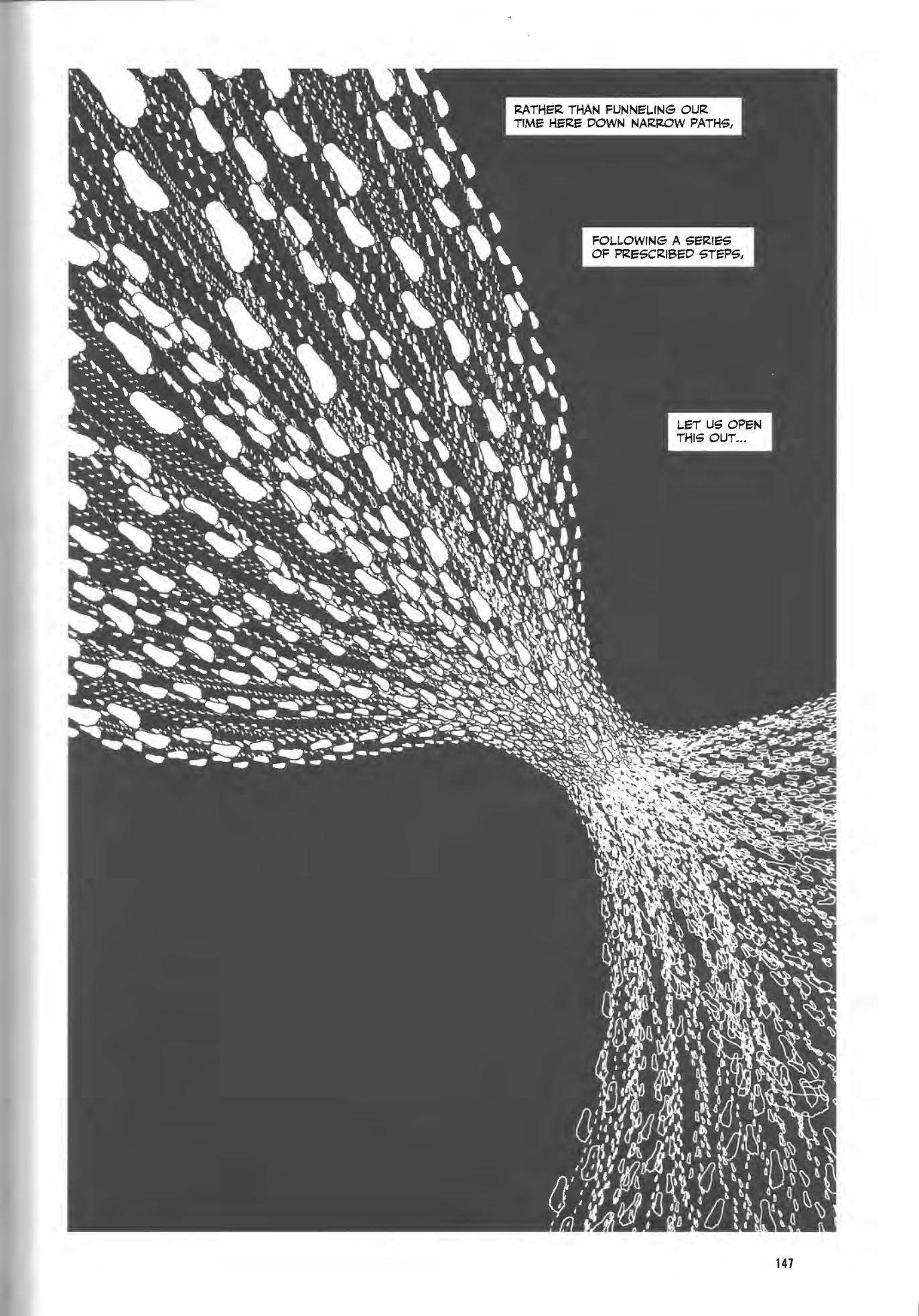


WHILE STANDARDIZATION
HAS ITS USES,



CONFORMING TO ANOTHER'S
EXPECTATIONS IS DETRIMENTAL
- IF THE SHOE DOESN'T FIT,
IT'S HARD TO MOVE FREELY.

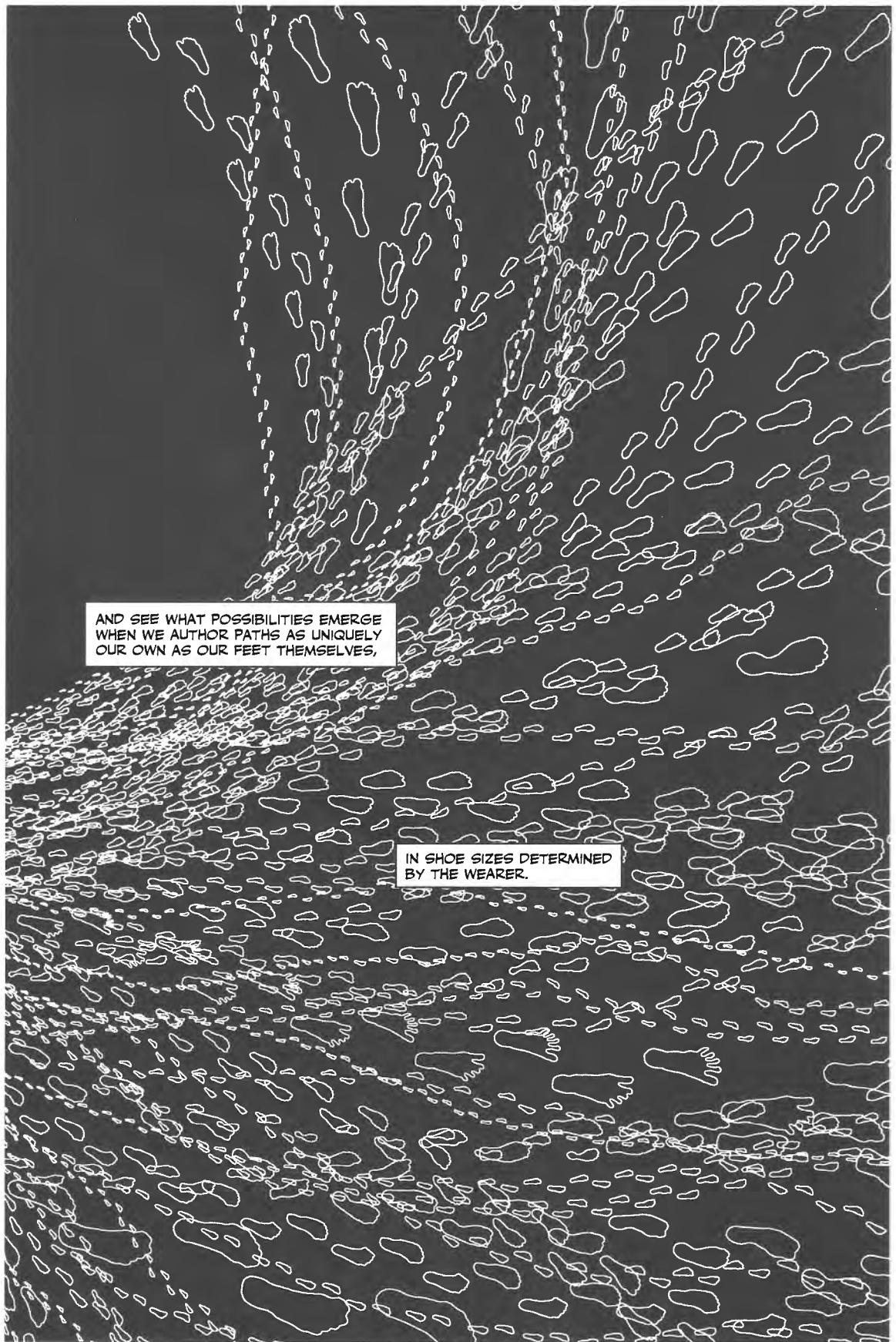


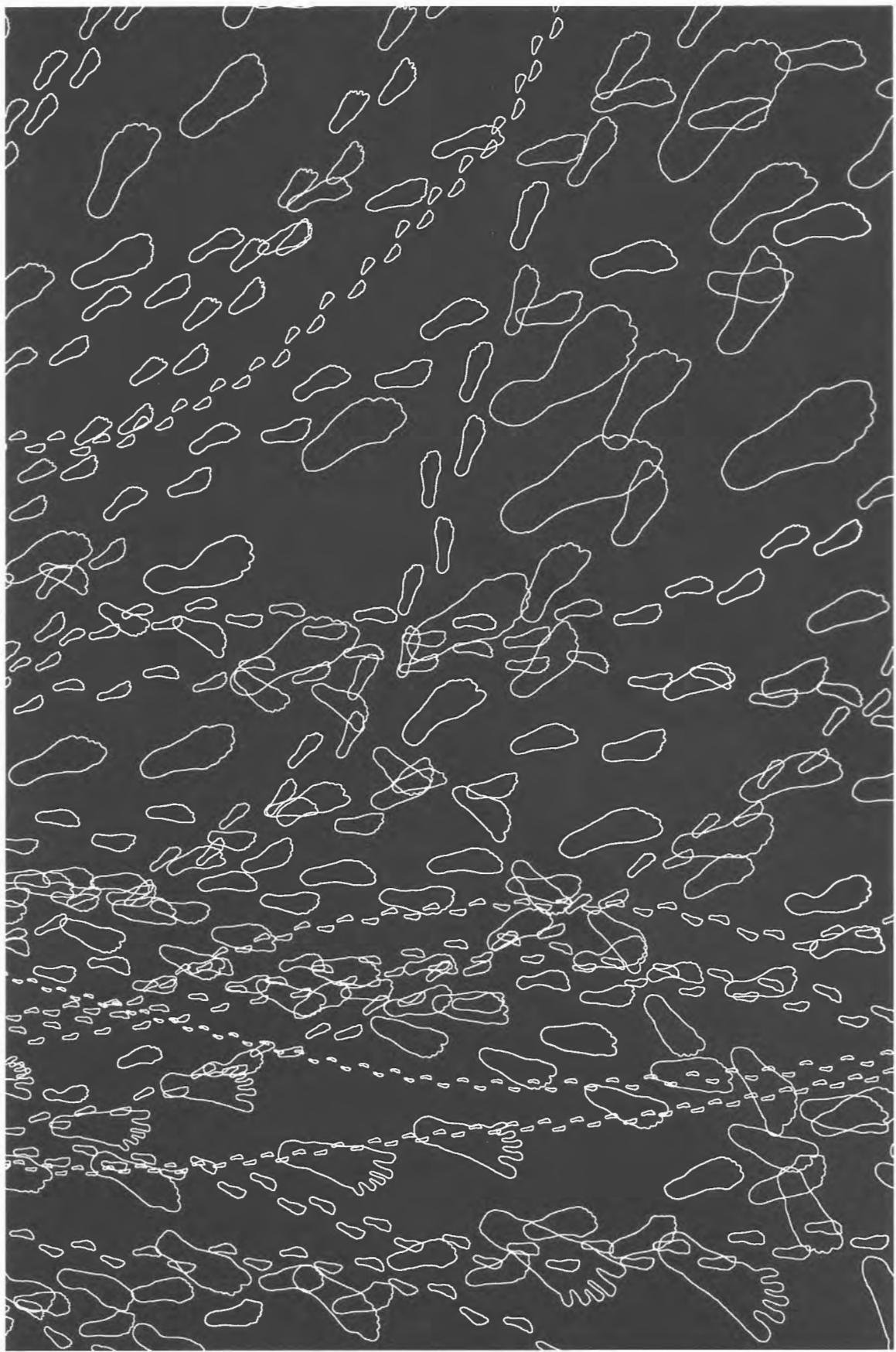


RATHER THAN FUNNELING OUR
TIME HERE DOWN NARROW PATHS,

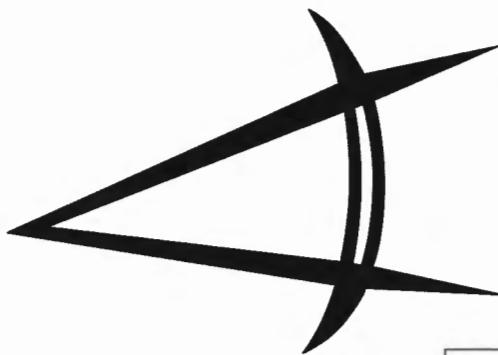
FOLLOWING A SERIES
OF PRESCRIBED STEPS,

LET US OPEN
THIS OUT...

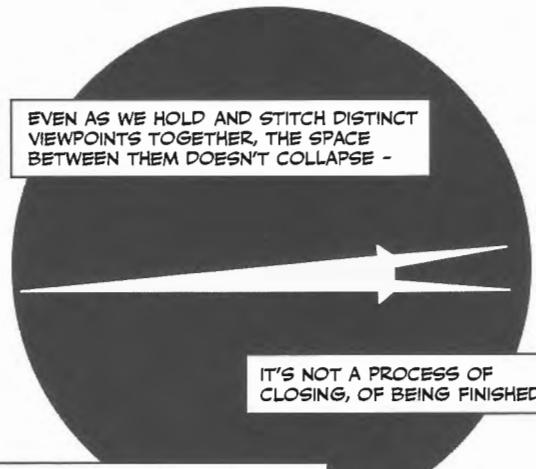




UNDERSTANDING, LIKE SEEING, IS GRASPING
THIS ALWAYS IN RELATION TO THAT.



EVEN AS WE HOLD AND STITCH DISTINCT
VIEWPOINTS TOGETHER, THE SPACE
BETWEEN THEM DOESN'T COLLAPSE -



IT'S NOT A PROCESS OF
CLOSING, OF BEING FINISHED.

RATHER, EACH NEW ENGAGEMENT
GENERATES ANOTHER VANTAGE POINT FROM
WHICH TO CONTINUE THE PROCESS ANEW.

A DISTANCE BETWEEN
ALWAYS REMAINS.



THERE ARE
ALWAYS GAPS:

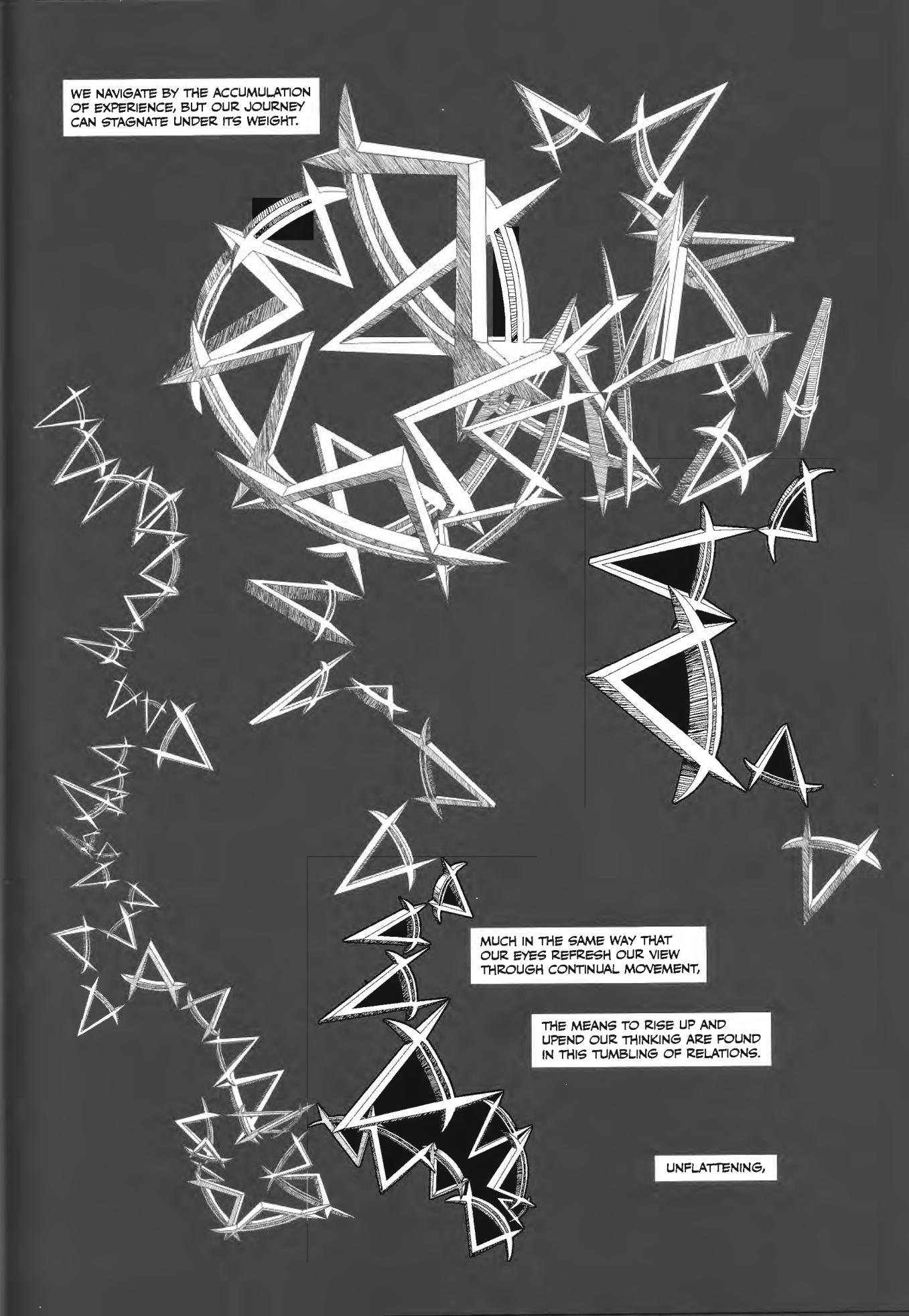


SPACES FOR THE UNKNOWN,
OPENINGS FOR IMAGINATION
TO SPILL INTO.



INCOMPLETENESS
REVEALS THAT
THERE IS ALWAYS
MORE TO DISCOVER.





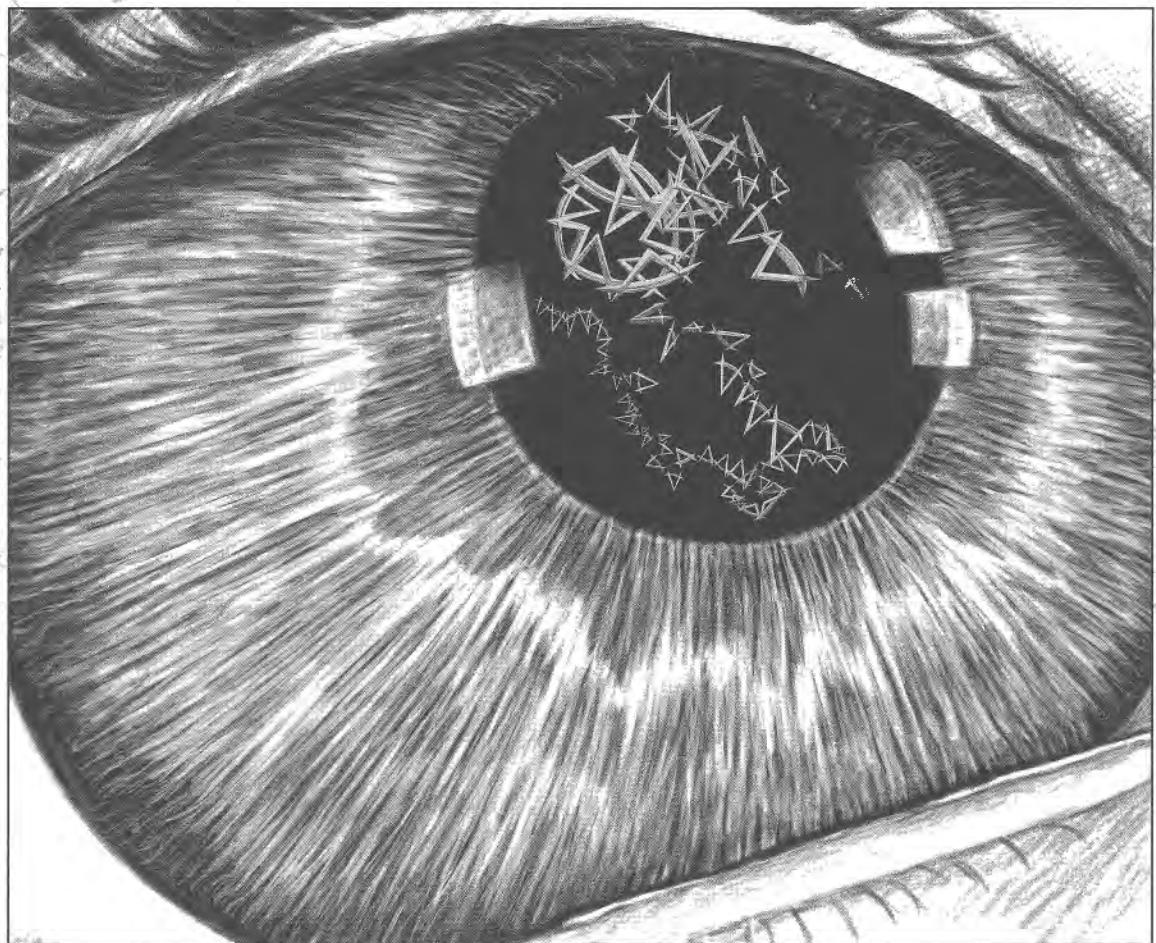
WE NAVIGATE BY THE ACCUMULATION
OF EXPERIENCE, BUT OUR JOURNEY
CAN STAGNATE UNDER ITS WEIGHT.

MUCH IN THE SAME WAY THAT
OUR EYES REFRESH OUR VIEW
THROUGH CONTINUAL MOVEMENT,

THE MEANS TO RISE UP AND
UPEND OUR THINKING ARE FOUND
IN THIS TUMBLING OF RELATIONS.

UNFLATTENING,

WE REMIND OURSELVES OF WHAT
IT IS TO OPEN OUR EYES TO THE
WORLD FOR THE FIRST TIME.



notes

bibliography

acknowledgments

early sketches

NOTES

The following serves as notes to the visual and textual references. You need not read these notes to understand, enjoy, or disagree with *Unflattening*. But some of you may be curious to see the backstory, the hidden influence, behind my words and drawings.

CHAPTER 1: FLATNESS

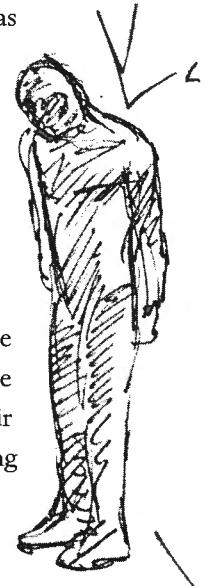
Pages 3–5: Piranesi's *Carceri*, Fritz Lang's *Metropolis*, Diego Rivera's industrial mural in Detroit, and Anton Furst's architectural designs for the film version of Gotham City influence the opening pages. The sleepwalking figures themselves reference the Borg from *Star Trek*, shrink-wrapped, stone, or plaster statues (Denise Fanning's Detroit installation of plaster figures came to mind), Munch's *Scream*, Käthe Kollwitz's anguished figures (though I never let mine be anywhere near as expressive), Giacometti's almost alien figures, and Death from *The Seventh Seal*.

The sleepwalking, marching figures first raised—or, rather, lowered—their heads during my time in Detroit and were the centerpiece of the public art billboard I installed along Woodward Avenue in April of 2004. For the project, I sought to address and depict transformation by embedding two images—two concepts—in one piece. The primary image used space as standard, flat billboards do. On a series of equally spaced slats, I encoded a second image, the edges of which faced oncoming traffic such that they were nearly invisible. However, coming alongside it, drivers would witness a fleeting transformation as the slats lined up to reveal the second image.



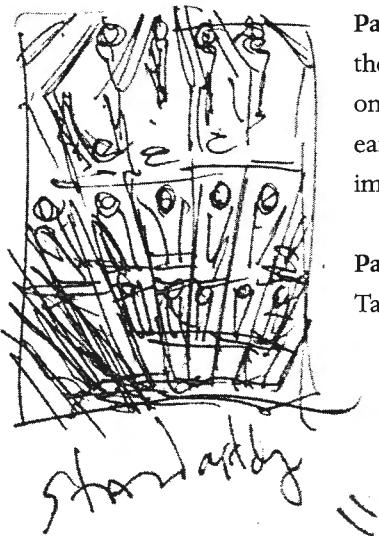
The motorist's own movement brought about the metamorphosis, a conceptual transformation; the two-in-one speaks to what this project is seeking to do as well. As I wrote in my artist statement from that time, "Can art awaken something dormant within us?" I sought to offer a rebuttal and a reminder of our complexity, asking commuters to open their eyes to "a glimmer of possibility often obscured." Imagery and information about the project are online at http://www.thedetroiter.com/APR04/ns_billboard.html.

The flatlander's body positioning was influenced by Cathy Davidson's (2011) description of students marched down their hallways with hands kept behind their backs. At the time that I was working on this chapter, my dad, a teacher of physics for over four decades in the sort of experiential way that John Dewey would have liked, had retired and then taken a job mid-year at a different school, filling in for a teacher who'd been using worksheets as his mode of instruction apparently for his entire career. My dad's frustration at trying to push at the boundaries of what students had come to expect served as much of the inspiration for the images more directly referencing school institutions. He reported their being weighed down by having to carry their AP test prep books, and while they were good at taking tests, they couldn't make connections or ask questions. The "great weight" references his accounts, as well as Italo Calvino's (1993) discussion of "heaviness," which will be referenced again in the Flatland Interlude.



Page 6: Marcuse (1991, p. 14); the reference to lacking "a critical dimension" comes from the introduction by Kellner (p. xxvii).

Page 8: Julie Bosman's (2010) article in the *New York Times* on the declining sale of children's picture books due to pressures on parents to get their kids reading chapter books at earlier and earlier ages to prepare for tests horrified me and inspired the imagery on this page.



Page 10: While I do not cite it explicitly, the images draw on Tagore's description of the "education factory" in which students

are put in boxes and become

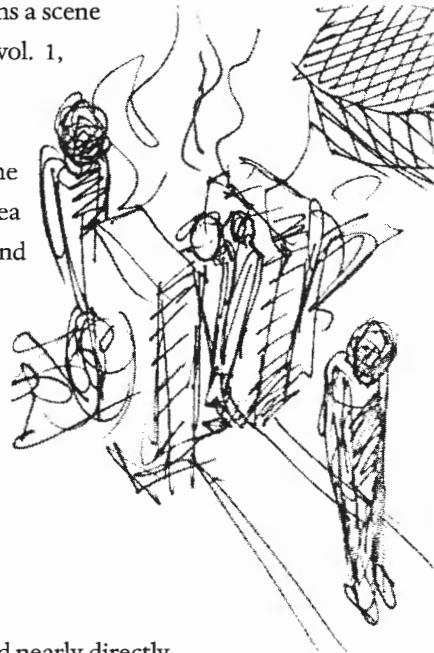
"lifeless, colorless, dissociated from the context of the universe, within bare white walls staring like eyeballs of the dead. We are born with that God-given gift of taking delight in the world, but such delightful activity is fettered and imprisoned, muted by a force called discipline which kills the sensitiveness of the child mind which is always on the alert, restless and eager to receive first-hand knowledge from mother nature. We sit inert, like dead specimens of some museum, while lessons are pelted at us from on high, like hail stones on flowers" (Tagore, 1966, pp. 213–214).

7 *larkman1966
(Boxes)*

Page 11: An allusion to a splash page from a Batman comic I read as a child. I made the sketch first and felt a trace of recognition. I tracked down the image, which turned out to be two different images, one on the cover and the other on the inside splash page, in which Batman's profile also contains a scene within; both images are from Detective Comics 457 vol. 1, published in 1975.

Page 12: A visual reference to Illich (1972), "the fundamental approach common to all schools—the idea that one person's judgment should determine what and when another person must learn" (p. 42).

Pages 16–17: I first used tops as metaphorical stand-ins for people in my piece for Maxine Greene's class. It appears in the 2010 book *Dear Maxine: Letters from an Unfinished Conversation*, edited by Robert Lake.

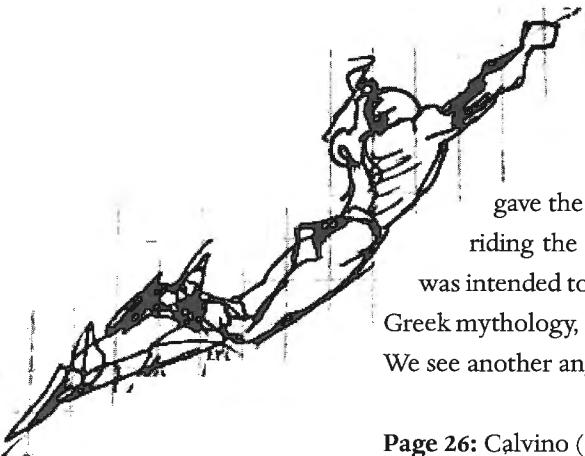


INTERLUDE: FLATLAND

Page 22–23: Text from the Flatlander sequence is derived nearly directly or paraphrased from Abbott's original 1884 novel.

Page 25: Hermes is (among other things) the god of boundaries and



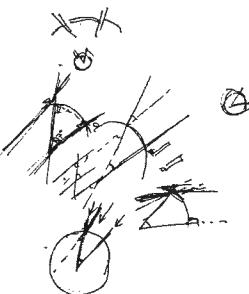


gave the winged sandals to Perseus. Perseus is often depicted riding the winged horse Pegasus. This gift of winged sandals was intended to transport Perseus to Medusa so he could slay her. In Greek mythology, Medusa can render inanimate all who look upon her. We see another angle of this story in Chapter 6.

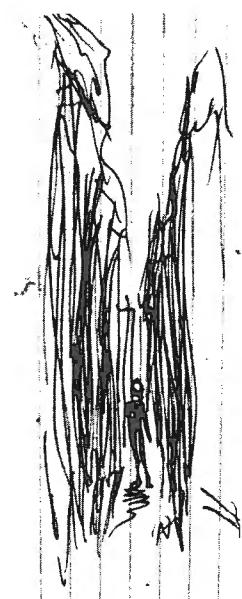
Page 26: Calvino (1993, p. 7) from his chapter on “lightness.”

CHAPTER 2: THE IMPORTANCE OF SEEING DOUBLE AND THEN SOME

Page 29: The spider is an orb-weaving, common garden variety. The jumping spiders often have more exotic eyes, but this spider had to have good-looking eyes and also be a web spinner. I can't make these up—my mother is a naturalist, and incorrect spiders won't fly.



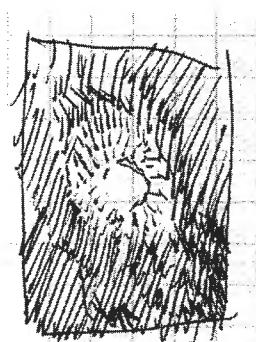
Page 31: A reworking of a nearly similar page in my piece “Mind the Gaps” (2011). The stars in the original were from the Orion constellation; here they are from the Perseus constellation. I worked out the relative distances for each star.



Page 32: I was familiar with Eratosthenes's method for calculating the circumference of the earth from my dad's physics class; we used the opportunity of students traveling from Michigan to Florida on spring break to perform a similar calculation. Carl Sagan's explanation of this from his *Cosmos* TV series was quite helpful—in it, he bends a cardboard mockup of Alexandria to Syene—and a similar bend shows up in my drawing.

Page 33: Information on Copernicus (and Kepler, who is hinted at but not mentioned as one of the “others” to expand on Copernicus) is drawn from Koestler (1963), as well as the NOVA documentary *Hunting the Edge of Space: How Telescopes Have Expanded Our View of the Universe* (PBS, originally aired June 4, 2010) and various websites detailing epicycles and other backflips required of the geocentric model.

Page 34: Draws on Horkheimer and Adorno (2002), Condorcet (1796), and Wilson (1998),





in which I found the passage attributed to Francis Bacon (p. 24).

Pages 35–37: These sequences are informed by the field of interdisciplinarity as delineated by Klein (1990), Repko (2008), and Welch (2011). The dialogue on page 36 is from L. Frank Baum's *The Wonderful Wizard of Oz* (1900), ch. 15.

Page 38: Snow (1964/1993, p. 4) and Dreyfuss (2011, p. 74). The dance steps and dance notations are my amalgamation of actual notation.

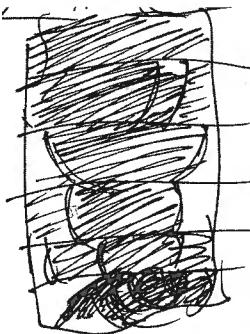
Page 39: Bakhtin (1981, p. 29). Oskin's (2009) article on Scott Page's work on the value of divergence and diversity for the creation of new ideas within groups (p. 48) informed some of my thinking here but wasn't directly cited. The composition of many eyes had me thinking back to the cover of Madeleine L'Engle's *A Wind in the Door* and the "drive of dragons" pictured on it. Deleuze and Guattari (1987). (I think their writing really lends itself to being presented in comics form.)

Page 40: For more about canine senses, see Bilger (2012) and Williams (2011).

Page 41: The ship is my recollection of a carved wooden canoe my parents have.

Page 42: Carse (1986) offers a notion of "horizontal vision," and the passage comes from p. 75. James (1907, p. 21), Cavafy (2002, p. 80). The walking figures reference Muybridge's photographic examinations of movement.

Page 43: My friend and mentor Fred Goodman suggests that tetrahedrons enclose a single space in such a way that they "beg" to be "turned over in one's mind." For Fred's 80th birthday, I made him a card depicting different turns of a tetrahedron, which I subsequently reworked for this page. Latour (2005, pp. 145–146) suggests that an object's dimensionality allows us to move around it. The page also references sculptor David Barr's globe-spanning "Four Corners Project"—the largest sculpture ever made (with the least amount of material).



Page 44: The explanation of fractal coastlines and related concepts is drawn from Peak and Frame (1994), Peitgen, Jürgens, and Saupe (1992), Mandelbrot (1983), Briggs and Peat (1999), and McGuire (1991), from which the passage by Mandelbrot is also drawn. The coastline explored here is that of Ithaca, Greece.

Page 45: The passage “Did it flow?” is from James Joyce’s *Ulysses* (1934, p. 655), ch. 17 (Ithaca). A trace of some text from my mom, Anne Sousanis (1987), remains in the text: “Our ecosystems may have visual boundaries but they are not isolated from one another.” And Heraclitus, who needs no citation at this point, “one cannot step into the same waters twice.”

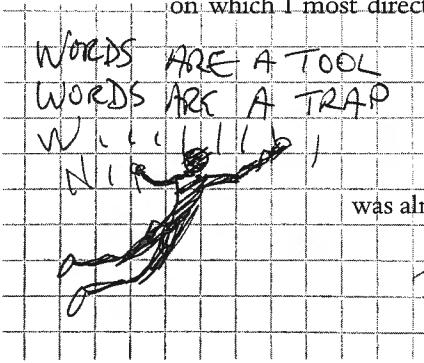
CHAPTER 3: THE SHAPE OF OUR THOUGHTS

Page 49: I had previously used the title of this chapter for an essay in comics form in the journal of *Visual Arts Research* (Sousanis, 2012), and this chapter reworks and greatly expands upon ideas from that previously published piece. Page 62 is most directly drawn from that earlier piece; it’s a new drawing, but with the same composition and scene for the most part, with altered text.

Page 53: The terms “anchor” and “relay” are a nod to Roland Barthes’s theory of the interaction of image and text, which is quite applicable to thinking on comics as well.

Page 54: I did set fire to several pages in an attempt to get this to look just right. That did not go well and I can’t recommend trying it at home. In the dissertation version of this work, I was required by the Office of Doctoral Studies to include a “List of Figures” at the front of the document to refer solely to the “figure” on this page—the page

on which I most directly break the fourth wall as to what academic scholarship is supposed to look like. Their insistence upon having a list of figures to point to the sole page of text in a work made of figures quite poetically emphasized the point I was already making here.



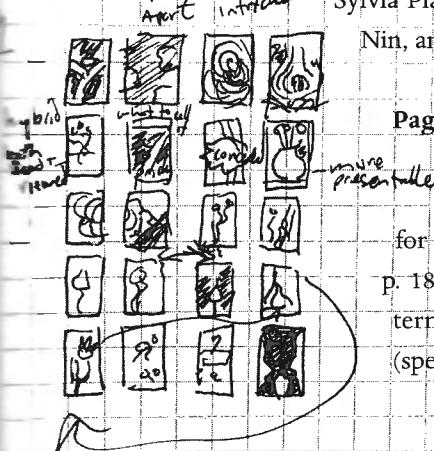
Page 56: Stems from Descartes's *Discourse on Method* (1637/2001): "Of refraction" (pp. 75–83); "Of the eye" (pp. 84–126); and "Of the rainbow" (pp. 332–345). The moon and telescope belong to Galileo, who is never mentioned in the text but has his fingerprints all over it. Adam Gopnik's (2013) article on Galileo helped inform both the imagery and the integration of reason and perception that closes the page—what he called a "fluid mixture of sense impression and strong argument."

Page 57: Hayakawa (1944/1995, p. 9). You can learn more about the Dymaxion Map and other projects on the Buckminster Fuller Institute website, www.bfi.org.



Page 58: Langer (1957, p. 80), Baxandall (1985, p. 1), and Kosslyn et al. (2006) draw an important distinction between verbal and visual in terms of how they function as a means of representation and how they make "different sorts of information explicit and accessible" (Kosslyn et al., p. 12). The sentence diagram was provided by Russell Willerton, who kindly responded to my request for assistance on social media. Everett Maroon came up with an alternative approach of which I incorporated a few elements.

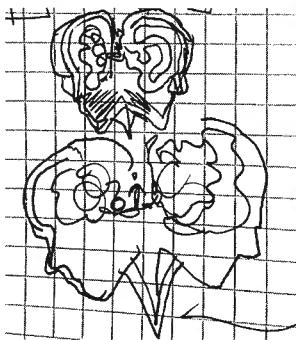
Page 59: Langer (1957) claims that due to its linear form, language falls short in conveying feelings and emotions, and thus discursive forms are seen as intelligent, while everything else is relegated to the realm of the irrational (p. 143). My final line references Wallace Stevens, who said of poems, "not ideas about the thing but the thing itself." The Cartesian coordinate planes/walls are made from poems by the following authors: Sappho, Dorothy Wordsworth, Emily Dickinson, ^{tease} Sylvia Plath, Maya Angelou, Adrienne Rich, Anais ^{intimate} Nin, and Georgia Douglas Johnson.



Page 60: Various alternative names for comics are listed or integrated into the imagery here (for a list of alternative names for comics, see Duncan and Smith, 2009, p. 18). *Manga*, *bandes dessinées*, and *fumetti* are terms for comics in Japan, France, and Italy (specifically of the photo-comics variety),

respectively. McCloud (1993) and Hogben (1949) connect comics back in time to a lineage that began with the cave paintings at Lascaux. “A rose by any other name would smell as sweet” stems (ha!) from *Romeo and Juliet*.

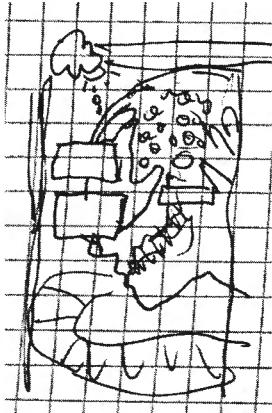
Page 61: McCloud (1993, p. 9). The lunar calendar is redrawn from a 30,000-year-old Paleolithic calendar produced at the same time as the cave paintings in Lascaux. While the connection between cave art and comics is often made, I was thrilled to link this calendar to comics—as here, time is literally written in space.



Page 62: Groensteen (2007, p. 146). It should also be noted that while I initially happened upon the Banyan tree because of the imagery, it turns out that, like comics themselves, the Banyan, as Thompson (2012) writes, can be seen as “both hierarchical and rhizomatic!”

Page 63: McGilchrist (2010). Also, on a related note, Hatfield (2009) discusses comics as an art of tensions. Though I do not mention it explicitly here, Hatfield’s point merits further discussion.

Page 64: Harvey (1979), Lewis (2001, p. 69), and Tufte (1990, p. 12). The text, appearing alongside Botticelli’s *The Birth of Venus* in the upper left, is from the opening to Hemingway’s *The Old Man and the Sea* (1952).



Page 65: Nodelman (2012, p. 438). The broader discussion of multimodality (though not named as such here) draws on Jewitt and Kress (2003), Kress (2010), Kress and van Leeuwen (1996), and Kress, Jewitt, Ogborn, and Tsatsarelis (2001).

Page 66: The Spiegelman quote is from Witek (2007, pp. 276–277), and Ware from Ball and Kuhlman (2010, p. 182). My composition on the lower left borrows from Frank Quitely’s wonderful perspectival panels in *W.E.3*, and in the lower right, his collaged compositions from *Flex Mentallo*. The imagery also plays with “you’re nothing but a pack of cards” from *Alice’s Adventures in Wonderland* to go along with giant Alice in the house.

Page 67: Langer (1957, p. 81).

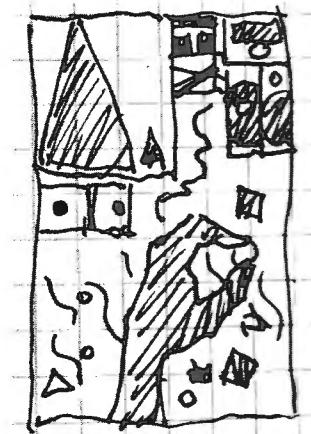
CHAPTER 4: OUR BODIES IN MOTION

Page 69: The dancers are alighting across an image drawn from a cloud chamber—a machine made for detecting particles invisible to our eyes.

Page 72: Arnheim (1969, p. 54). Though not cited, Merleau-Ponty is worth remembering here: “Vision is a palpation by means of the gaze.”

Page 73: Noë (2004, p. 164).

Page 74: Rosand (2002, p. 1). Gombrich (1960) discusses recognition, “Making comes before matching” (pp. 105–106). He also discusses recognizing something in marks, connecting to a resemblance (p. 38). Lakoff and Núñez (2000) discuss the visual system as linked to the motor system; this allows one to trace out a structure with our hands (p. 34). The tracks come from various field guides to animal tracks supplied by my mom and the web, and include mouse in the snow, turtle in sand, bear claw swipe, turkey wing impressions, earthworm trails, rolling rocks (on Mars!), rivers, and more.



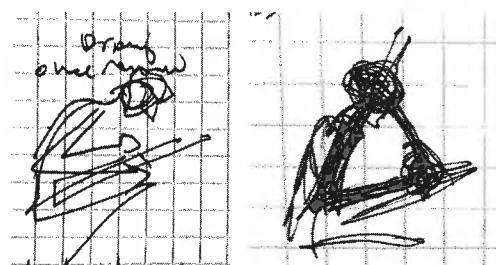
Page 75: Arnheim (1965, p. 259). The images visually reference Bang (2000)—an absolutely wonderful enactment of Arnheim’s theories.

Page 76: Lakoff and Johnson (1980, 1999), Lakoff and Núñez (2000). The formation of our most basic concepts (what they call conceptual metaphors) is grounded in our seeing and being in the world, ideas shaped, as Lakoff and Núñez (2000) suggest, “by our bodily experiences” (p. xiv). They use the term “image schemas” (which I chose not to include). Image schemas are both perceptual and conceptual, and bridge “language, reasoning, and vision” (p. 31), from which we derive conceptual metaphors.

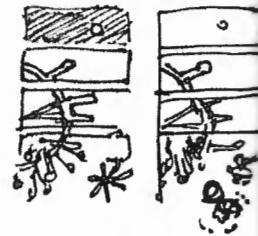
Page 79: Suwa and Tversky (1997, pp. 385–386).

Page 80: Moffett (2011, p. 137). The page also gestures toward Crockett Johnson’s *Harold and the Purple Crayon*.

Page 81: Stafford (1999, p. 29), Root-Bernstein (1985), and also



draws on Burton, Horowitz, and Abeles's (1999) work on the importance of the arts in curriculum.



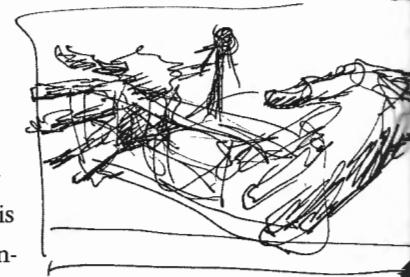
CHAPTER 5: THE FIFTH DIMENSION

Page 85: The title references Rod Serling from the *Twilight Zone* equating imagination with the fifth dimension. I picked it up from a Grant Morrison-written Batman comic.

Page 87: As with prior instances, the text here hews closely to Abbott's original.

Page 89: Greene (1995, p. 37).

Page 90: Pelaprat and Cole (2011); the diagram of eye movement (saccadic motion) is based on Yarbus (1967) mapped onto da Vinci's *Mona Lisa*.



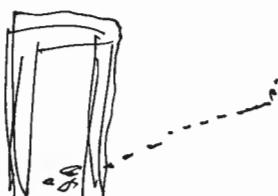
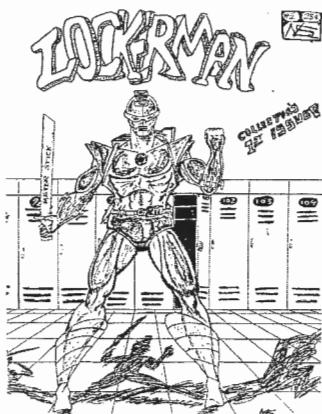
Page 91: The reference to gap-spanning is drawn partially from Johnson (1987). For more on "conceptual blending," see Fauconnier and Turner (1998, 2002).

Page 92: Lockerman first appeared in print in 1986 and was distributed courtesy of the Almont High School copy machines.

Page 93: My brother takes issue with my use of "tall tales" here.

Page 95: The opening depicts scenes from *The 1001 Arabian Nights*. The turn to science here draws on Saliba's (1999) description of the works of Nasir al-Din al-Tusi, whose works aided Copernicus's discoveries. Goodman (1978, p. 2).

Page 96: After Bill Watterson's *Calvin and Hobbes*, Superman changing in a phone booth, and the Tardis from *Dr. Who*. Bachelard (1964/1994, p. 134). String theorists surmise that dimensions we can't experience are curled up tightly within those we can.



CHAPTER 6: RUTS

Page 107: The handprints are my redrawing of Paleolithic prints made on cave walls.

Page 109: Mumford (1967, p. 286).

Page 110: The column and upper panel backdrop are both redrawn from the stele upon which the Code of Hammurabi was written.

Page 111: Dewey (1916/1966, p. 49). For the record, it took me a long time to go slowly enough to consciously break down the steps of how I tie my shoes. I consulted the web and was relieved that my method was a proper and effective one.

Page 112: My wife mapped six of her actual daily commutes. Regarding the dérive, see Debord (1957–1961/1992).

Page 113: The walking man is from John Cleese's classic *Monty Python* "Ministry of Silly Walks" sketch. The last two figures are inspired by *Singin' in the Rain* (1952).

INTERLUDE: STRINGS ATTACHED

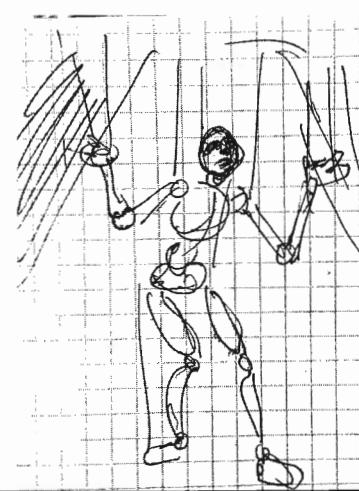
Page 120: An allusion to Eric Carle's *The Very Hungry Caterpillar*.

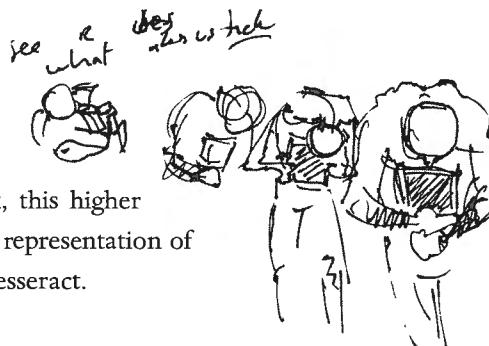
Page 122: "Who are you?" is the first line the caterpillar says to Alice in *Alice's Adventures in Wonderland* (1865). Monarch caterpillars do turn over into an upside-down question mark.

CHAPTER 7: VECTORS

Page 125: Artemis is not only the goddess of the hunt and the moon, but also a midwife.

Page 129: Besides looping back to the opening pages, the text also references the Calvino (1993) passage from the *Flatland* Interlude that comes from his chapter on "lightness"—to work against forces of heaviness and inertia.





Page 131: The box within a box, this higher dimension, is a three-dimensional representation of a four-dimensional hypercube or tesseract.

Page 132: Elements on this page are drawn from a wide variety of sources, including Zimmer (2006): eye development, squid eye, lancelet; Davies (2014): DNA proteins, heart development; Shlain (1991): grasping hand; Pilcher (2013): grasping hand, eyes; Lisieska (2010): squid eye; Robson (2014): stone tools and evolution. The central figure is from Vesalius's "On the Fabric of Human Body."



Page 133: Building on Latour (2005) and his notion of "trace of associations" as part of Actor-Network-Theory.

Pages 134–135: For more on description of actors as puppets, see Latour (2005, pp. 59–60). Also see Latour (pp. 215–218) for further discussion of emancipation not as being free from bonds but as being well attached.

Pages 136–137: Draws on Strongman's (2008) wonderful breakdown of the differences between European and Pacific Islander navigation methods.

Page 138: Dewey (1916/1966, p. 41).

Page 139: Gibran's poem "On Children" (1923, pp. 21–22).

CHAPTER 8: AWAKING

Page 144: Illich (1972) considered the "fundamental approach common to all schools—the idea that one person's judgment should determine what and when another person must learn" (p. 42). Also references Freire's (2000) "banking model" of education.

Pages 145, 147–149: Attributions for the feet depicted here are listed in the acknowledgments. People sent me feet from at least three continents based on a call I broadcast on social media. The call read as follows:



Trace the outline of each one of your feet and then label it *right/left, male/female* (what shoe you wear, not your gender), and *US shoe size*. In my case, this looks like *R, M, 10.5*, and *L, M, 10.5*. Then scan or take a digital photo of the tracing, low-resolution is fine (and preferred), as all I need is a clear outline. Label the picture/scan as above without any additional identifying information. Send it to me at nsousanis@gmail.com with subject heading "foot project" (or some clever pun if you'd prefer).

I will not identify your feet in any way in the work, and will save all the image files in a folder without retaining the sender's information. I'll be redrawing the outlines, for visual clarity and consistency as well.

Pages 150–151: Draws on the following discussions—on the semiotics of Charles Peirce: Kockelman (2006), Liszka (1996), Daniel (1984), and Whipple (2005); on the importance of diversity in dialogue: Oskin (2009), Freire (2000), and Greene (1995); on cell destruction being the key to renewal: Zimmer (2009); on "creative destruction": Schumpeter (1942/1976).





BIBLIOGRAPHY

In the process of making this book I read and was influenced by many books and images. Some of them are named in the preceding pages; others have left an invisible, yet no less important, imprint on my words and drawings. Traditional bibliographies are partial to the written word and list mostly books and articles. Images of all sorts have been just as important to me as I made this book. If you wish to learn more about these images and their influence on *Unflattening*, please turn to the section titled Notes.

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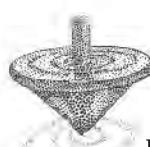
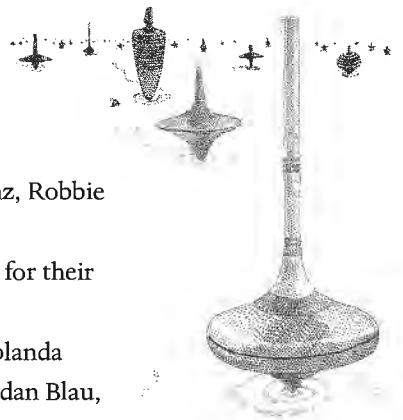
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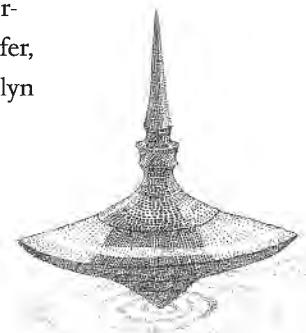
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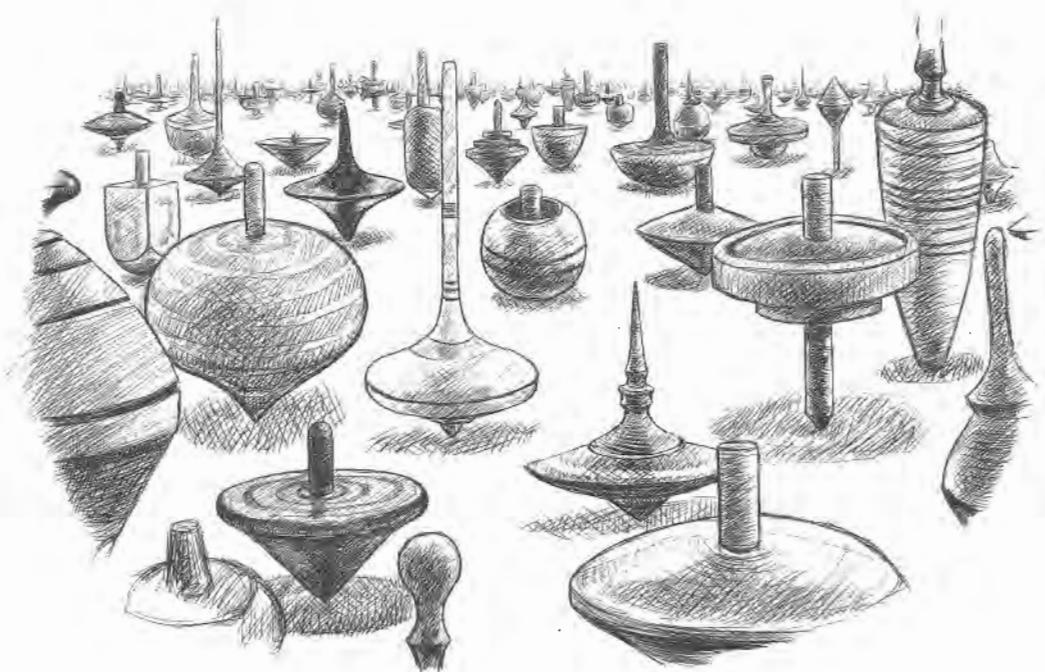
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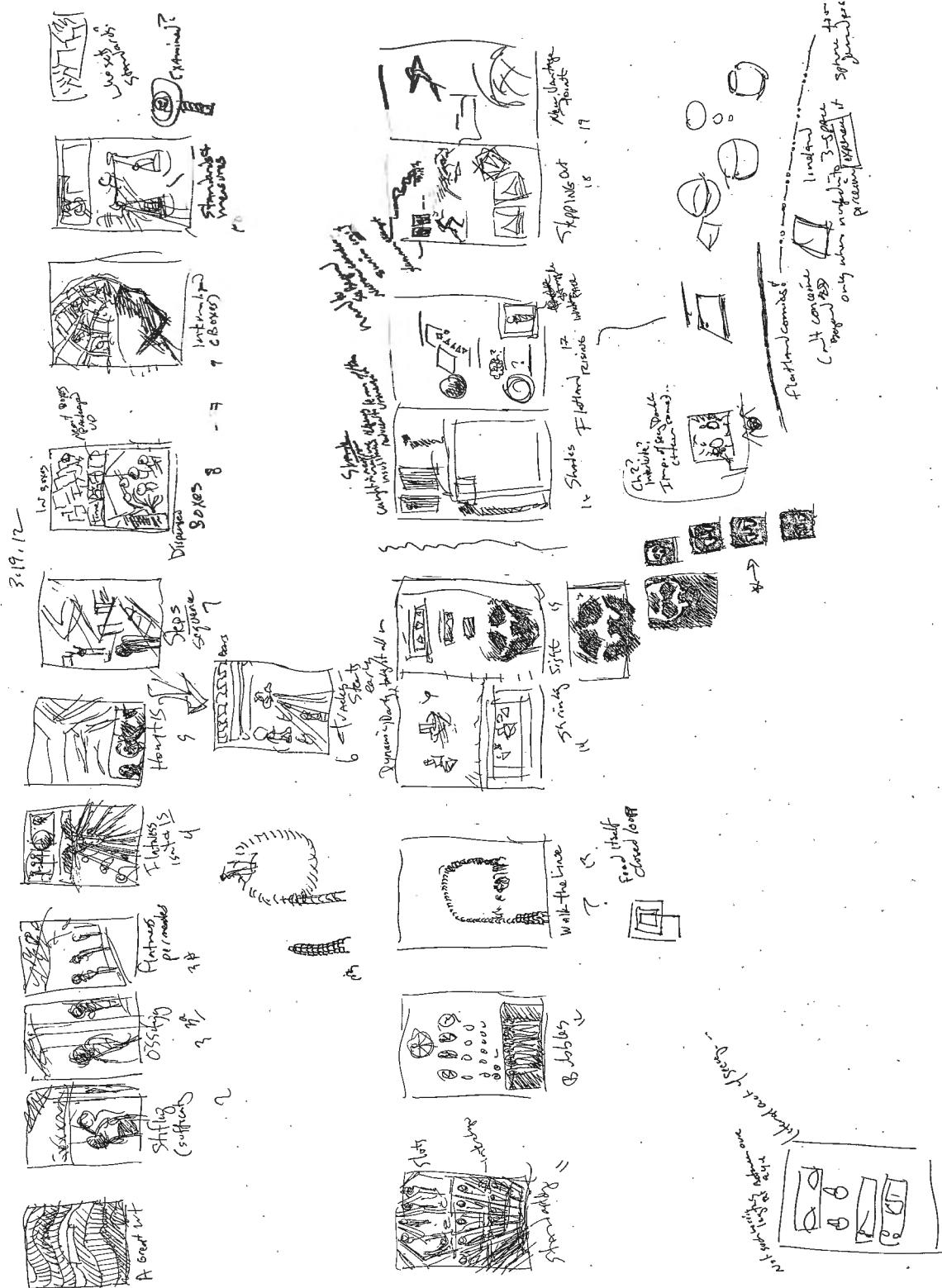
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THE PRIMACY OF WORDS OVER IMAGES has deep roots in Western culture. But what if the two are inextricably linked, equal partners in meaning-making? Written and drawn entirely as comics, *Unflattening* is an experiment in visual thinking. Nick Sousanis defies conventional forms of scholarly discourse to offer readers both a stunning work of graphic art and a serious inquiry into the ways humans construct knowledge.

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NICK SOUSANIS is a comics artist and an educator. He is a Postdoctoral Fellow in Comics Studies at the University of Calgary.

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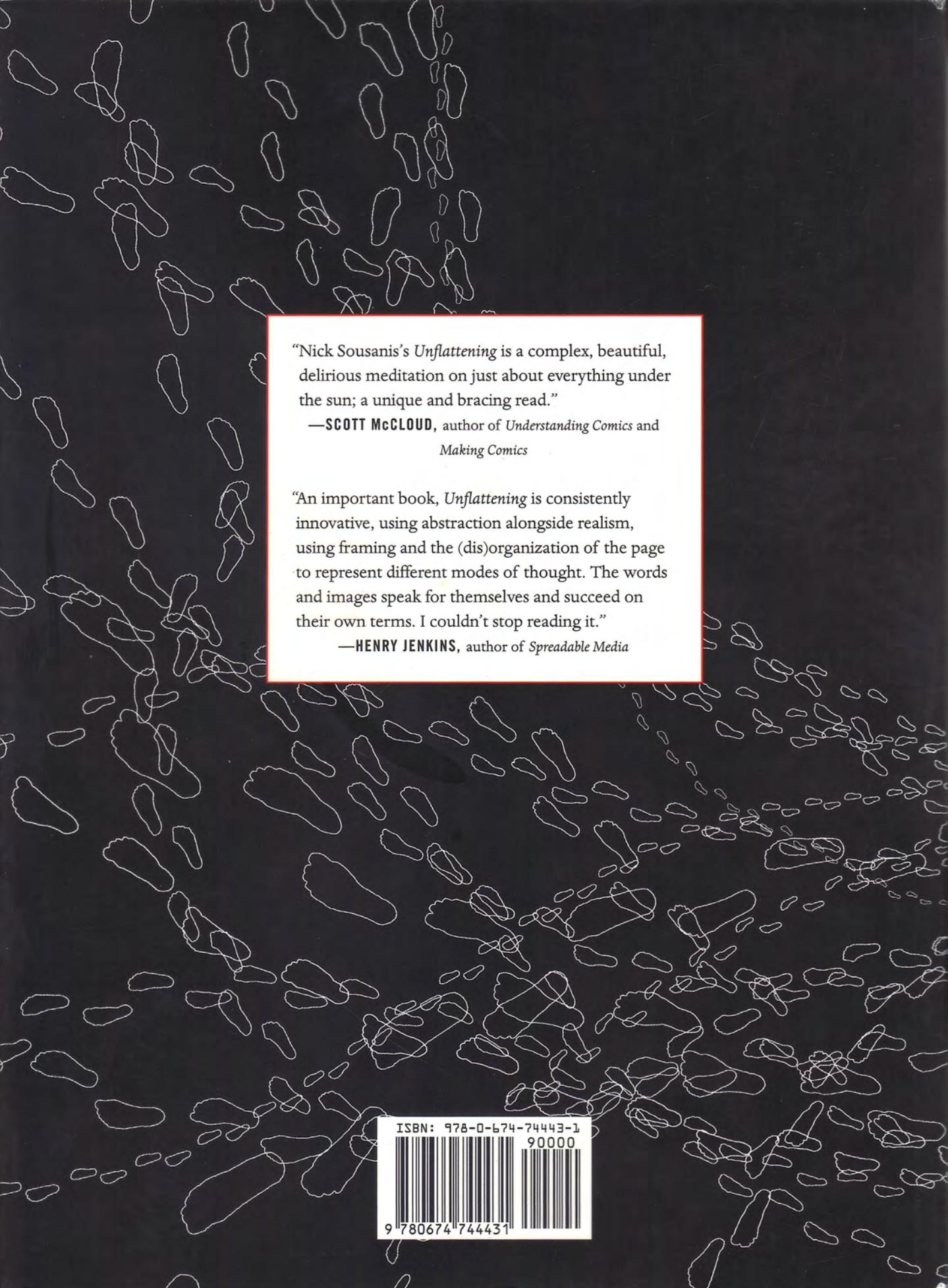
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