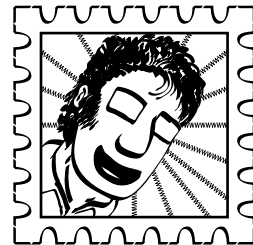


THERE ARE NO IMAGES (TO BE SEEN)



OR "THE FALLACY OF THE INTERMEDIATE ENTITY"

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JANUARY 2010

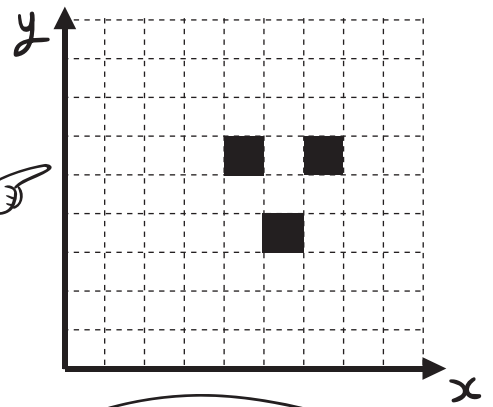


OUR WORLD IS
FILLED WITH PICTURES,
EVERYWHERE!
SOME OF THEM ARE DYNAMIC LIKE
MOVIES OR VIDEOGAMES.
BUT ARE **IMAGES REAL?**
DO IMAGES EXIST?
I CLAIM THAT
THEY DON'T!!

IMAGES
Are they real or
are they just a
cultural invention
of the post-
renaissance
visual world?



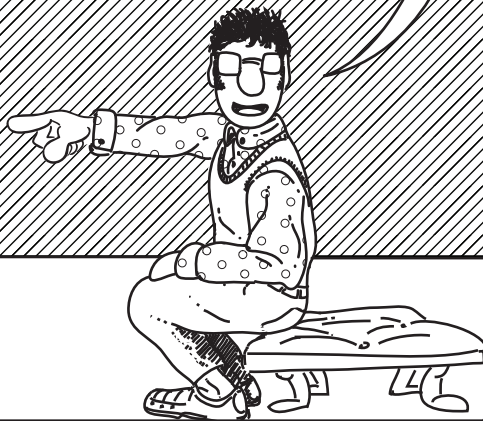
MMMMH ... IMAGES MAYBE ...
... BUT PICTURES?
WHAT IS A PICTURE?



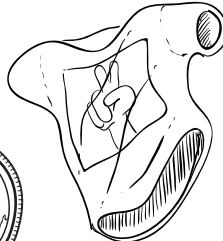
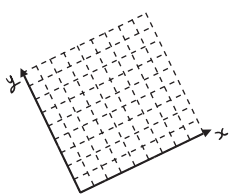
A PICTURE IS A **PHYSICAL**
TWO-DIMENSIONAL DISTRIBU-
TION OF VARIOUS
PROPERTIES (LIKE COLOR,
GRAY VALUES, ETC.)



THIS IS A PICTURE THEN!
IT'S PHYSICAL AND IT LASTS!
I CAN EVEN GO TO A
MUSEUM TO SEE IT!



PICTURES
ON ROLLED
PAPER OR
CURVED SUR-
FACES ARE STILL
PICTURES SINCE
THEY CAN BE
MAPPED ON A TWO
OR N-DIMENSIONAL
PHYSICAL
AND GEOMETRICAL
PROJECTION



WE CAN CONCEIVE
N-DIMENSIONAL PICTURES BUILT
IN ANY WAY WE LIKE! EVEN DYNAMIC ONES
LIKE MOVIES AND COMPUTER SCREENS.
THEY ARE PHYSICAL THINGS! BUT
PICTURES ARE NOT IMAGES ...

IN SHORT, A PICTURE
IS A **PHYSICAL** THING

A POSTAGE STAMP IS
A GOOD EXAMPLE!

YOU CAN STICK A
PICTURE BUT NOT
AN IMAGE

THUS AN IMAGE
IS **NOT** A PICTURE!

IT ALL STARTED
IN ITALY (SURPRISE!).
MANY CENTURIES
AGO

I SUGGEST THAT YOU SEE
AN IMAGE WHICH IS ONLY
A SECTION OF
THE VISUAL PYRAMID

WHEN ALBERTI
AND
BRUNELLESCHI
INTRODUCED THE
TECHNIQUE OF
PERSPECTIVE
IMPLICITLY THEY
SUGGESTED A
THEORY
OF PERCEPTION
ACCORDING
TO WHICH
WE DO NOT
PERCEIVE
THE WORLD
AS IT IS
BUT RATHER
AN IMAGE OF IT

LEON BATTISTA ALBERTI
(1404-1472)

FILIPPO BRUNELLESCHI
(1377-1446)

MMMH I DID EVEN WORSE ...
YET IT SEEMED ONLY REASONABLE AT THAT POINT
TO ASSUME THAT THE EXTERNAL IMAGE
WAS SUPPOSED AT THE OTHER
END OF THE VISUAL PYRAMID

KEPLER
1571-1630

I SUGGESTED
THAT
THERE IS AN IMAGE
INSIDE THE EYE ...
EHM
MINOR MISTAKE ...

EVEN MORE
ALLEGED
RETINAL INTERNAL
IMAGE

ALLEGED
EXTERNAL IMAGE
OF THE OBJECT
GETTING INSIDE THE EYE

OBJECT

BRAIN

INTERMEDIATE
NEURAL NUCLEUS

NEURAL SPIKES

OPTICAL
NERVE

EYE

PHOTONS

LIGHTSOURCE

EXTERNAL OBJECT

HOWEVER, AS FAR AS WE KNOW, THERE ARE NO IMAGES ALONG THE VISUAL
PERCEPTUAL CHAIN ...

MANY PHYSICAL PHENOMENA, BUT NEITHER PICTURES NOR IMAGES IN ANY SENSE ...

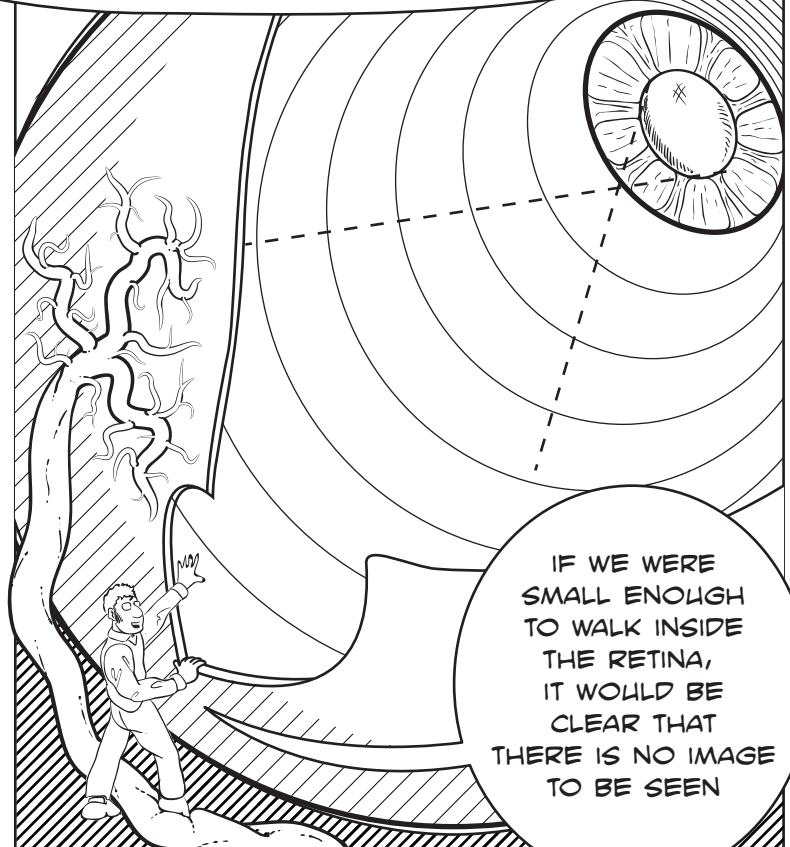
THE TRUTH IS THAT THERE ARE NO IMAGES, WHETHER IN THE EYE (PACE KEPLERO) OR IN THE BRAIN (PACE KOSSLYN) THERE ARE ANY IMAGES (NOT TO SPEAK OF PICTURES!). THIS IS JUST A USEFUL CULTURAL METAPHOR ... NOTHING BUT THAT!

THERE IS NO REASON TO SUPPOSE THERE IS ANYTHING LIKE AN IMAGE BETWEEN OUR EXPERIENCE AND THE WORLD, NOR THAT OUR EXPERIENCE IS AN IMAGE OF SOME KIND. THESE IDEAS DERIVE FROM THE HISTORICAL IMPORTANCE OF OPTICKS FROM THE XVI TO THE XVII CENTURY

SEEING THE WORLD OR SEEING IMAGES OF THE WORLD ARE VERY DIFFERENT THINGS. DO WE REALLY SEE IMAGES?

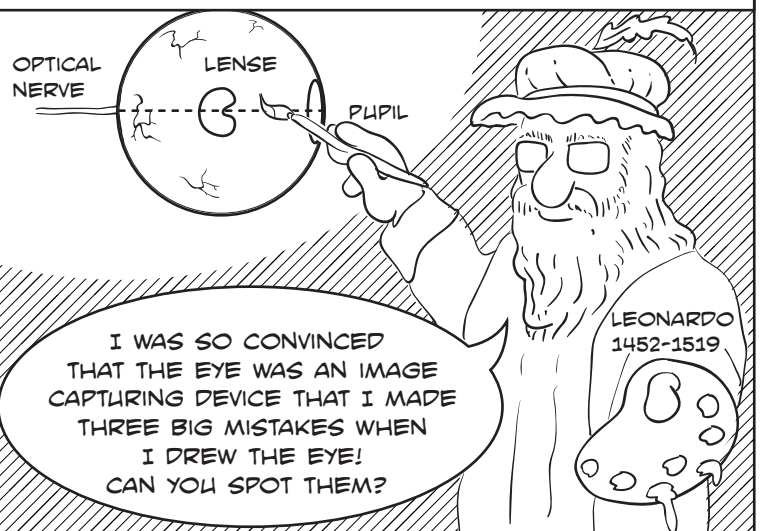


THOUGH A PICTURE (EVEN A STEREO PAIR) COULD BE THE CAUSE OF A SIMILAR VISUAL EXPERIENCE ... IT DOES NOT HAVE TO BE THE CASE!!!



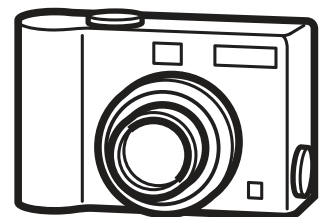
IF WE WERE SMALL ENOUGH TO WALK INSIDE THE RETINA, IT WOULD BE CLEAR THAT THERE IS NO IMAGE TO BE SEEN

MANY SCHOLARS WERE MISLEAD BY SUCH WRONG VIEWS



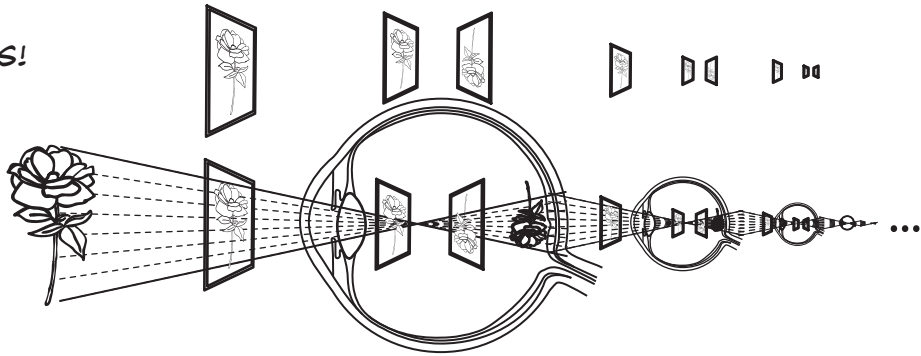
LEONARDO
1452-1519

IN THE SAME SENSE, NEITHER A CAMERA NOR A SCANNER ARE IMAGE CAPTURING DEVICES.



WHAT THEY DO IS TO PRODUCE PICTURES OUT OF WHAT THEY HAVE IN FRONT OF THEM (WHICH IN TURN IS NEITHER A PICTURE NOR AN IMAGE). CAMERAS AND PRINTERS MAKE PRINTS OUT OF THE OBJECTS THEY ARE POINTED TO. THEY DO NOT CAPTURE IMAGES!

SIMILARLY IN PERCEPTION
THE NOTION OF IMAGE IS OBNOXIOUS!
IF, TO SEE A FLOWER,
I NEED AN IMAGE
OF THAT FLOWER, THEN ...
IN ORDER TO SEE THAT IMAGE
I WOULD NEED AN IMAGE
OF THAT IMAGE OF THAT FLOWER
AND SO ON AND ON
AD INFINITUM ...

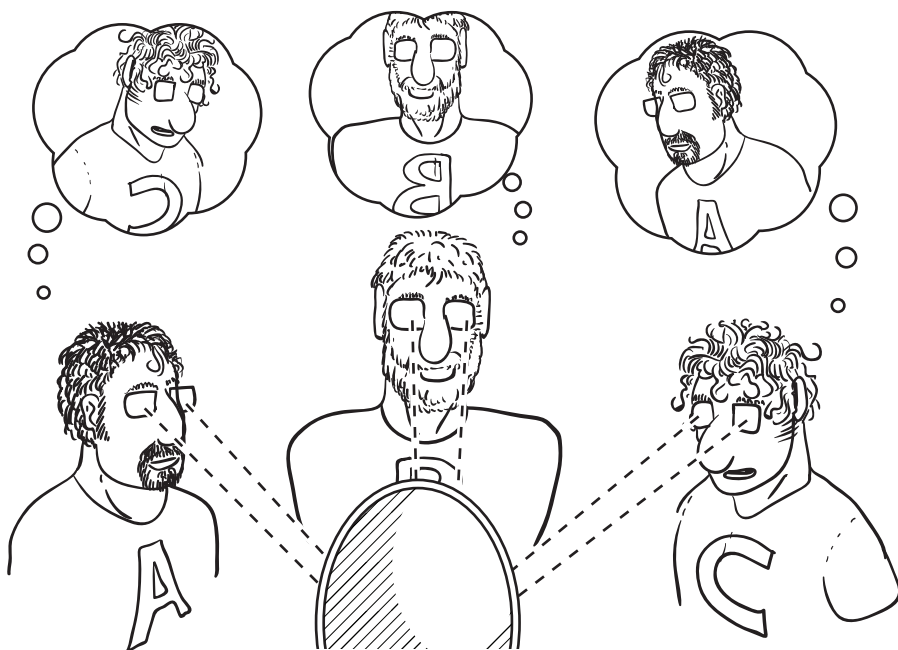


BUT AREN'T THERE IMAGES
ON THE SURFACE OF A MIRROR?

IS THAT
MYSELF?
???????

THE ANSWER IS NO ONCE AGAIN!
AS WE WILL SEE, THERE ARE
NEITHER IMAGES NOR REFLECTIONS.
THESE TERMS ARE JUST A FORM OF
SHORTHAND TO DESCRIBE
COMPLEX CAUSAL ENTANGLEMENTS

SURPRISINGLY, ON MIRRORS THERE ARE NO IMAGES, AS
CAN EASILY BE SHOWN, BY THE FACT THAT, GIVEN A MIRROR,
EACH OBSERVER SEES A DIFFERENT PART OF THE WORLD.
THUS, ON A MIRROR, YOU WOULD HAVE TO HAVE AN INFINITE
NUMBER OF IMAGES. ACTUALLY, THERE ARE NONE.
A MIRROR IS JUST A STRUCTURE MODIFYING THE USUAL
CAUSAL GEOMETRY OF LIGHT RAYS



YET ... HOW WOULD YOU EXPLAIN THAT, IN A MIRROR, WE DON'T SEE THE WORLD
AS IT IS, BUT APPARENTLY A LEFT- RIGHT INVERTED VERSION OF IT? ISN'T IT
AN INVERTED IMAGE OF THE WORLD? DON'T WE SEE A REFLECTION THEN?

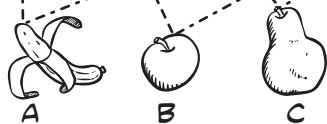
OVER THE SURFACE
OF A MIRROR
THERE IS NOTHING
TO BE SEEN. THE TRUTH
IS THAT THE **ORDER**
IN WHICH WE SEE THINGS IS
DIFFERENT. WHEN WE
HAVE A MIRROR, WE HAVE
TWO PATHS OF LIGHT TO
ANY OBJECT, RATHER
THAN JUST ONE.

OBSERVER
CHEATED BY
A REFLECTING SURFACE

DIRECT PATHS

ADDITIONAL PATHS
DUE TO THE MIRROR

MIRROR SURFACE



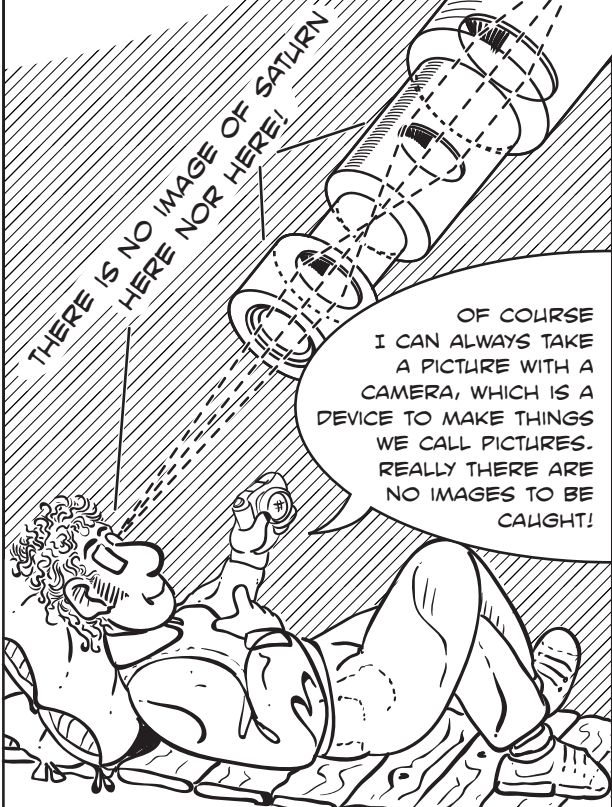
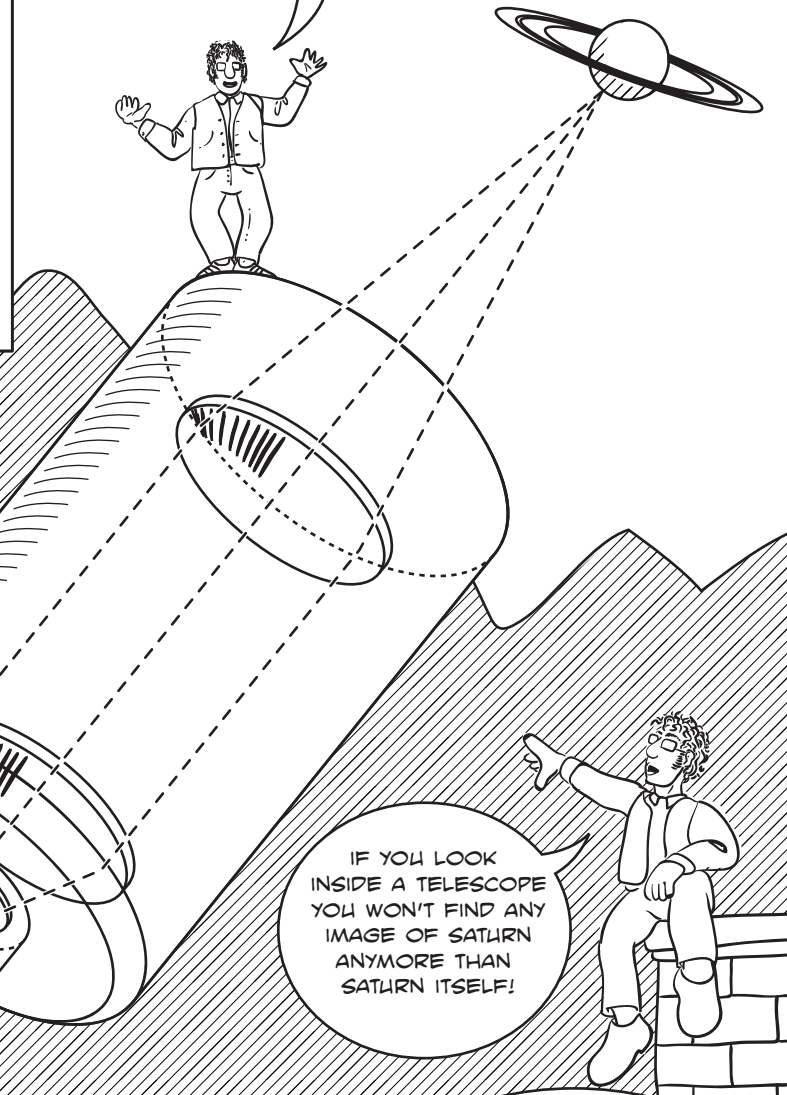
THE ALLEGED
MIRROR IMAGE IS
NOTHING BUT THE REAL
WORLD REACHED THROUGH
A REARRANGED ORDER OF
LIGHTRAYS COMING
INTO THE SUBJECT'S
EYE



THE SAME IS TRUE FOR MICROSCOPES, LENSES, DISTORTING MIRRORS AND SUCH THEY CHANGE THE CAUSAL GEOMETRY OF LIGHT, BUT THEY NEITHER CREATE NOR MANIPULATE IMAGES. THERE ARE NO IMAGES!



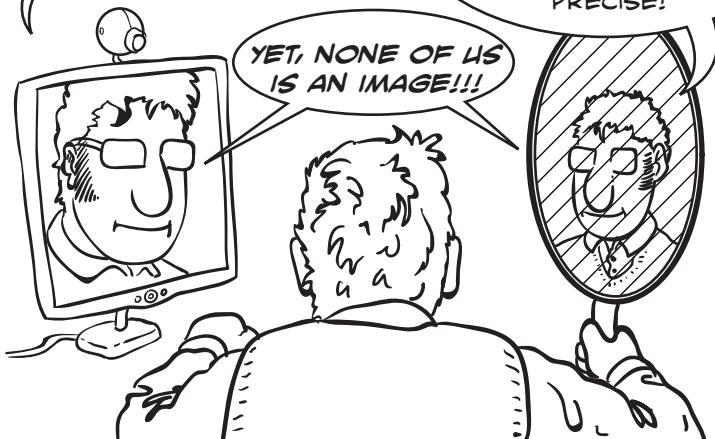
A TELESCOPE DOES NOT ACQUIRE IMAGES BUT MODIFIES THE GEOMETRY OF LIGHTRAYS IN A VERY UNUSUAL YET USEFUL WAY. A HUMAN OBSERVER IS THUS IN CAUSAL PROXIMITY WITH EVENTS THAT WOULD OTHERWISE BE DISCONNECTED FROM HIM/HER!



I'M A REAL PICTURE OF YOUR FACE DIGITALLY BUILT AND MOVING

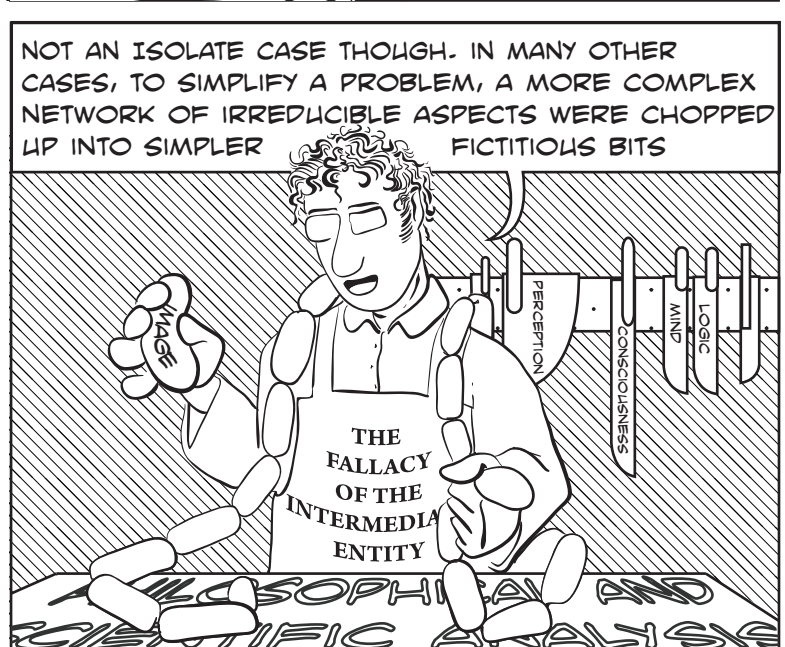
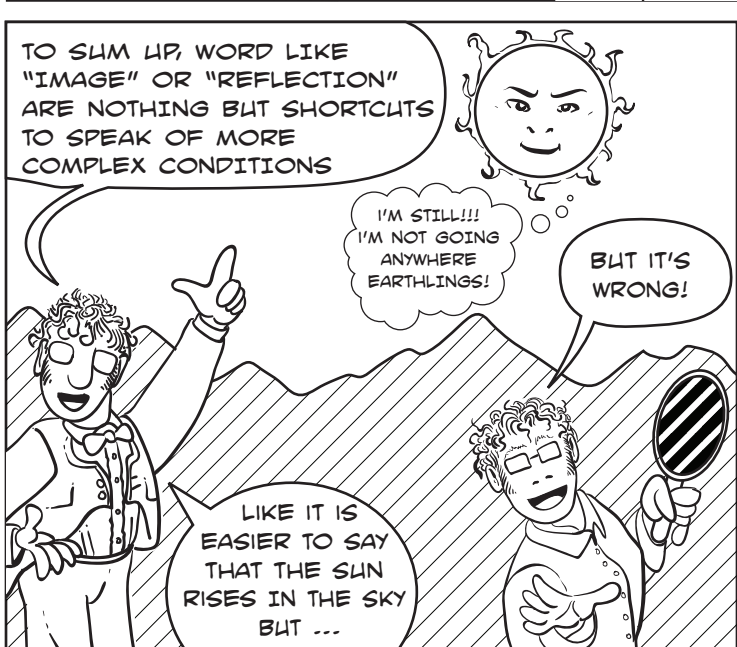
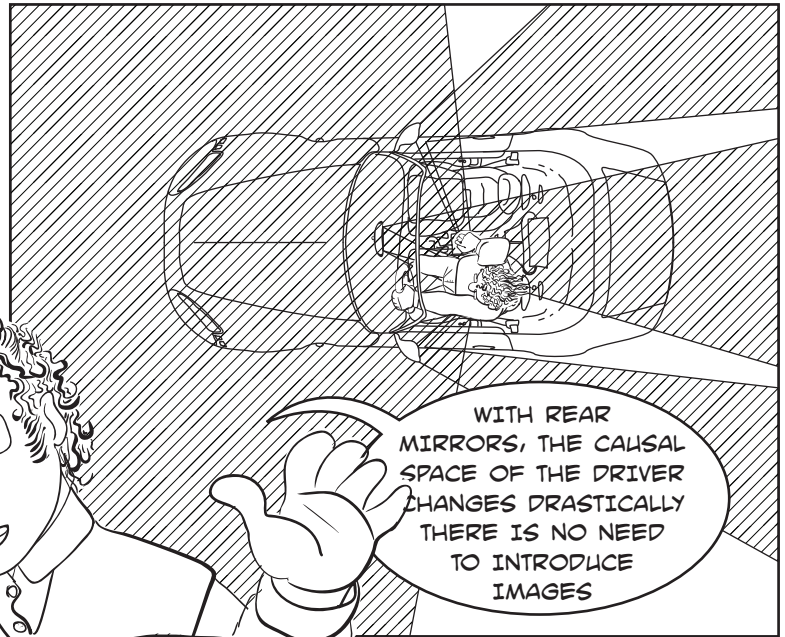
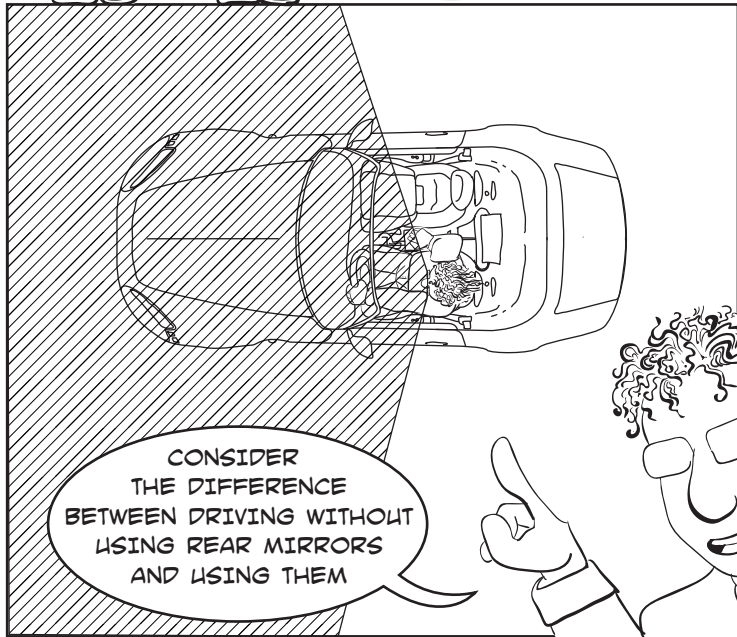
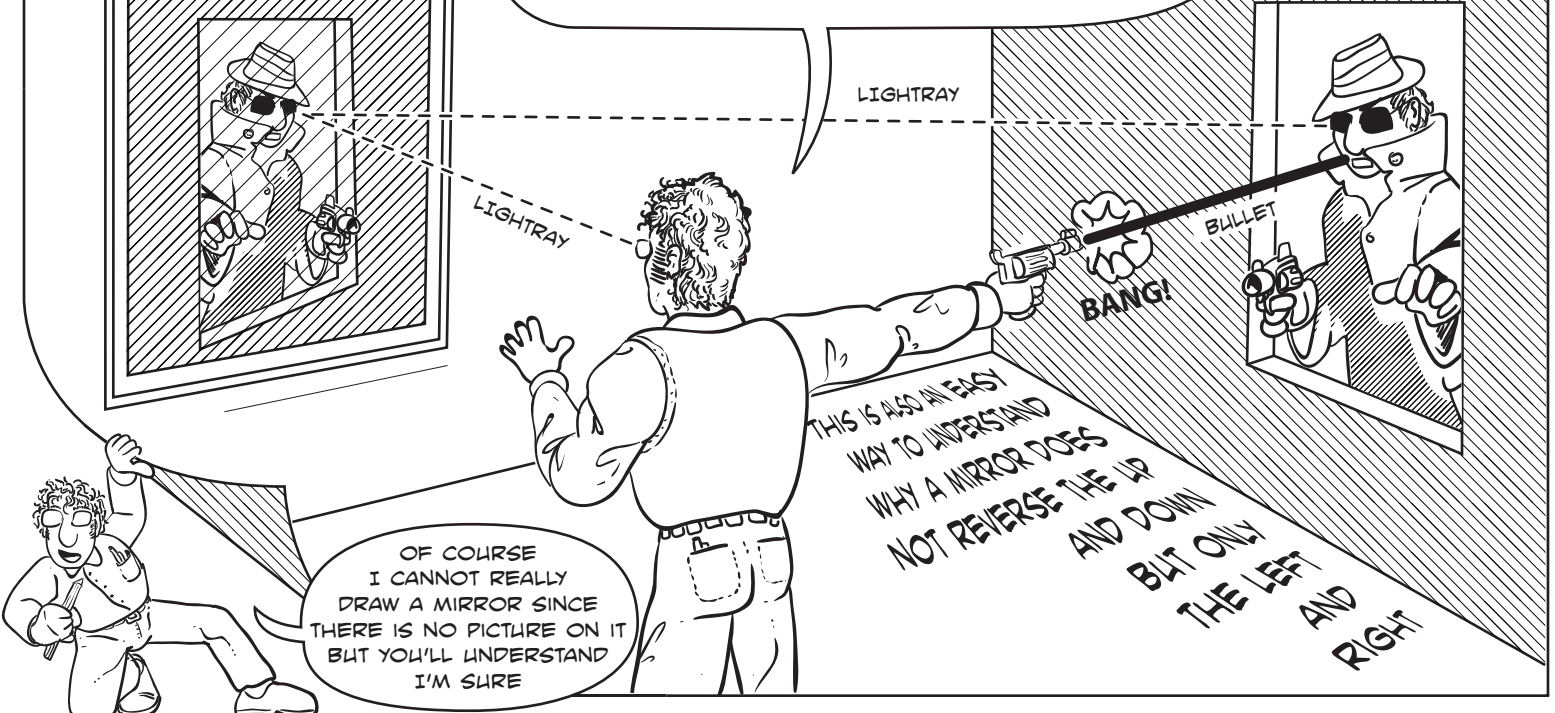
I'M NOTHING BUT A VARIATION IN THE CAUSAL NETWORK OF LIGHTRAYS YOU COULDN'T EVEN DRAW ME, IF YOU WERE PRECISE!

YET, NONE OF US IS AN IMAGE!!!



THERE IS A FUNDAMENTAL DIFFERENCE BETWEEN LOOKING AT MYSELF IN A WEBCAM GENERATED PICTURE AND AT MYSELF IN A MIRROR (AND IT'S NOT JUST THE LEFT-RIGHT INVERSION ...)

BY DEFLECTING LIGHTRAYS
IN UNUSUAL WAYS A MIRROR
ALLOWS THE BEHOLDER TO
INTERACT WITH REALITY
IT DOES CREATE NEITHER
REFLECTIONS NOR MIRROR
IMAGES

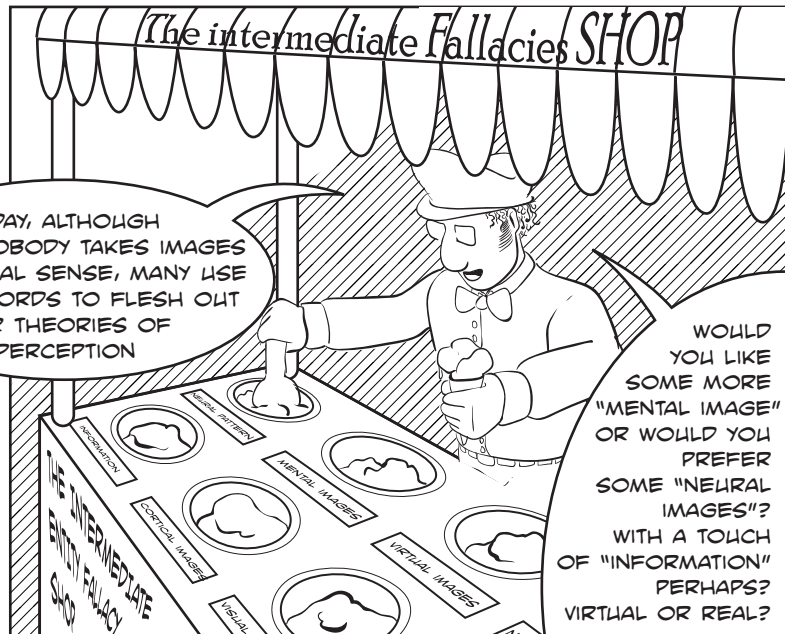


THE IDEA OF SENDING AND RECEIVING IMAGES IS SUPPORTED BY (INCORRECT!) ANALOGIES BETWEEN PERCEIVING THE WORLD AND RECEIVING INFORMATION AS IF IT WAS A QUESTIONS OF BITS OF MATTER GOING BACK AND FORTH!

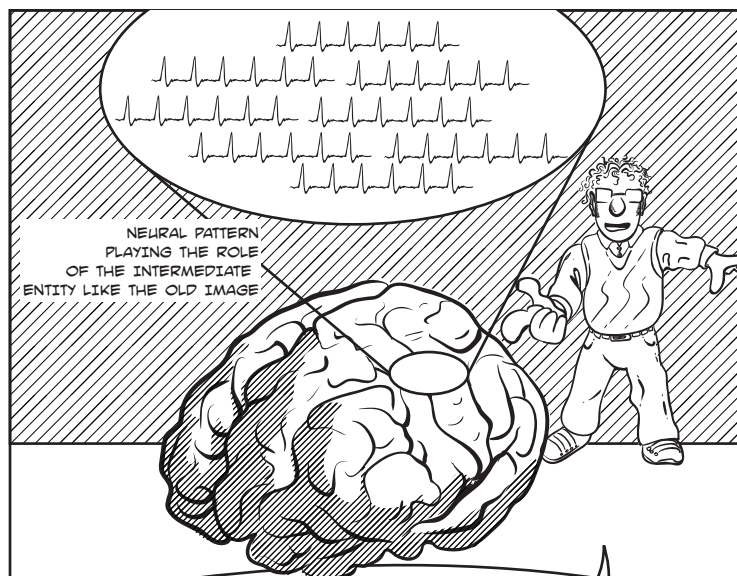


IMAGE EXPRESS

TODAY, ALTHOUGH ALMOST NOBODY TAKES IMAGES IN A LITERAL SENSE, MANY USE OTHER WORDS TO FLESH OUT THEIR THEORIES OF PERCEPTION



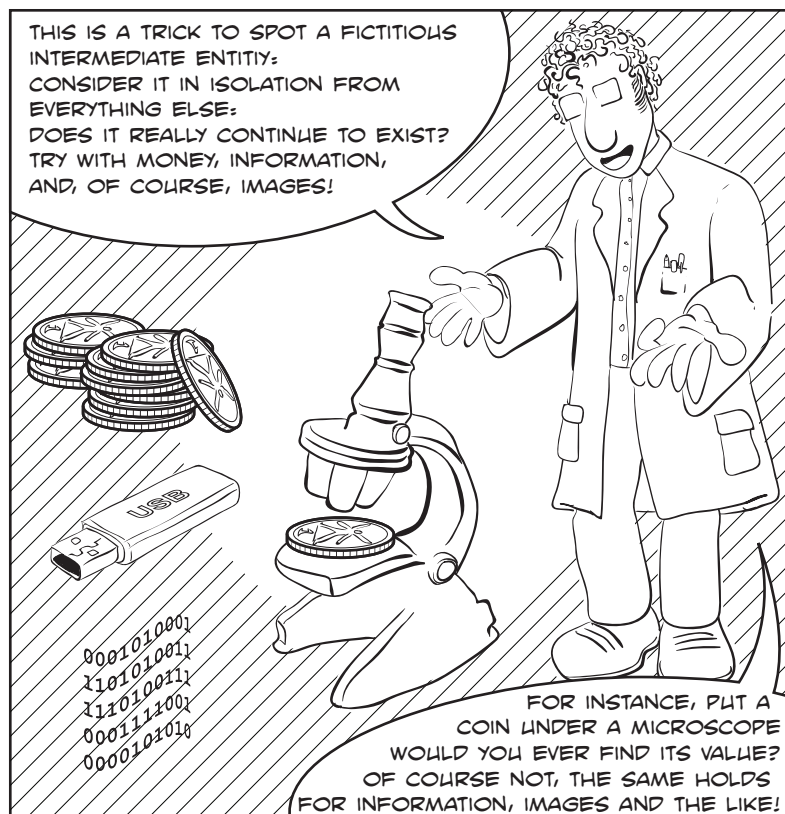
WOULD YOU LIKE SOME MORE "MENTAL IMAGE" OR WOULD YOU PREFER SOME "NEURAL IMAGES"? WITH A TOUCH OF "INFORMATION" PERHAPS? VIRTUAL OR REAL?



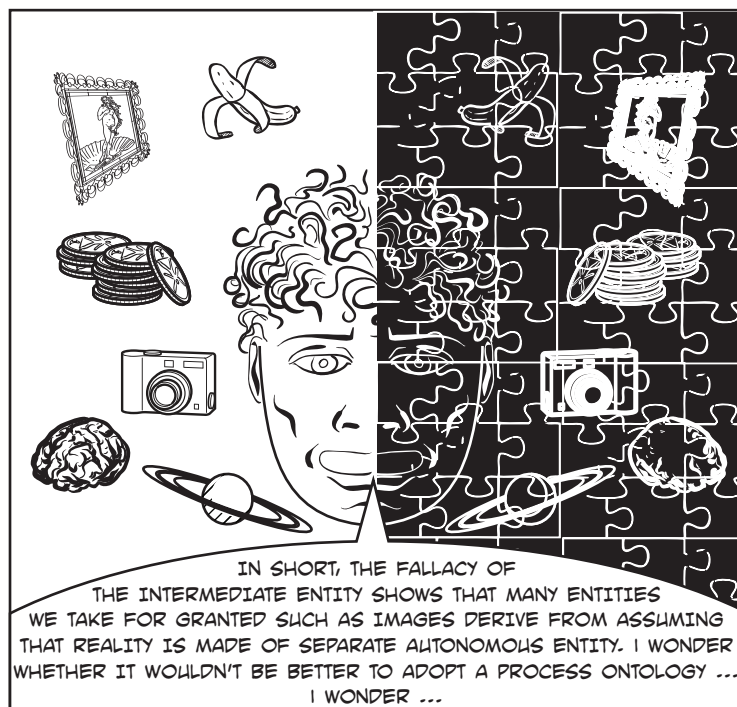
NEURAL PATTERN PLAYING THE ROLE OF THE INTERMEDIATE ENTITY LIKE THE OLD IMAGE

DAVID MARR, STEPHEN KOSSLYN, AND MANY OTHERS, FALL IN THE TRAP OF THE FALLACY OF THE INTERMEDIATE ENTITY WHEN THEY ASSUME THAT REPRESENTATIONS EXIST AS SOMETHING SEPARATE WHAT IS REPRESENTED. THEY SET ASIDE THE OLD NOTION OF IMAGE BUT KEPT THE THE NOTION DISGUISED AS "VISUAL REPRESENTATION", "MENTAL IMAGE", "NEURAL PATTERN" AND THE LIKE. YET IT IS AGAIN THE FALLACY OF THE INTERMEDIATE ENTITY

THIS IS A TRICK TO SPOT A FICTITIOUS INTERMEDIATE ENTITY: CONSIDER IT IN ISOLATION FROM EVERYTHING ELSE: DOES IT REALLY CONTINUE TO EXIST? TRY WITH MONEY, INFORMATION, AND, OF COURSE, IMAGES!

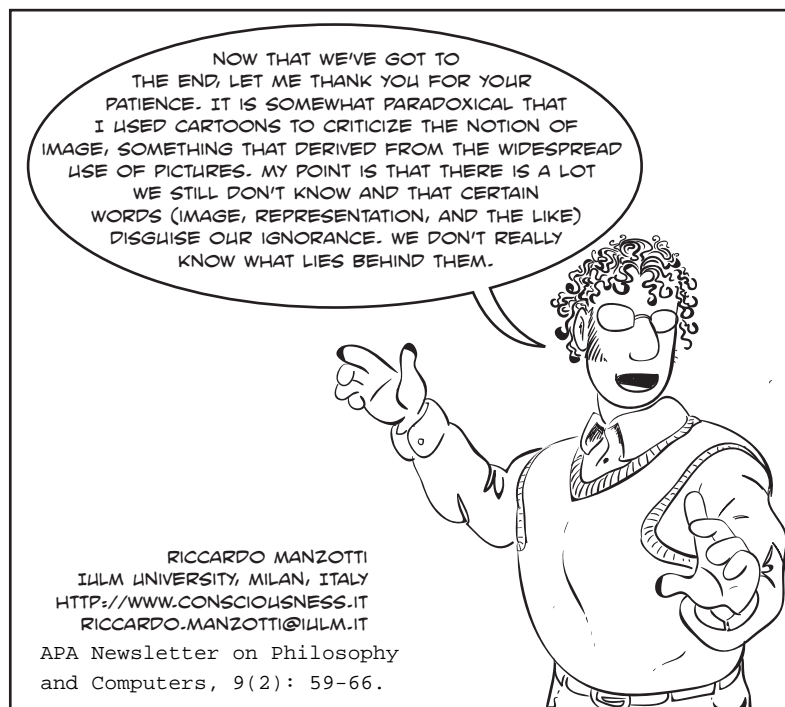


FOR INSTANCE, PUT A COIN UNDER A MICROSCOPE WOULD YOU EVER FIND ITS VALUE? OF COURSE NOT, THE SAME HOLDS FOR INFORMATION, IMAGES AND THE LIKE!



IN SHORT, THE FALLACY OF THE INTERMEDIATE ENTITY SHOWS THAT MANY ENTITIES WE TAKE FOR GRANTED SUCH AS IMAGES DERIVE FROM ASSUMING THAT REALITY IS MADE OF SEPARATE AUTONOMOUS ENTITY. I WONDER WHETHER IT WOULDN'T BE BETTER TO ADOPT A PROCESS ONTOLOGY ... I WONDER ...

NOW THAT WE'VE GOT TO THE END, LET ME THANK YOU FOR YOUR PATIENCE. IT IS SOMEWHAT PARADOXICAL THAT I USED CARTOONS TO CRITICIZE THE NOTION OF IMAGE, SOMETHING THAT DERIVED FROM THE WIDESPREAD USE OF PICTURES. MY POINT IS THAT THERE IS A LOT WE STILL DON'T KNOW AND THAT CERTAIN WORDS (IMAGE, REPRESENTATION, AND THE LIKE) DISGUISE OUR IGNORANCE. WE DON'T REALLY KNOW WHAT LIES BEHIND THEM.



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APA Newsletter on Philosophy
and Computers, 9(2): 59-66.