

CSCE 625: Artificial Intelligence

Dr. Dylan Shell

Robert Frost on search

*Two roads diverged in a yellow wood,
And sorry I could not travel both
And be one traveler, long I stood
And looked down one as far as I could
To where it bent in the undergrowth;*

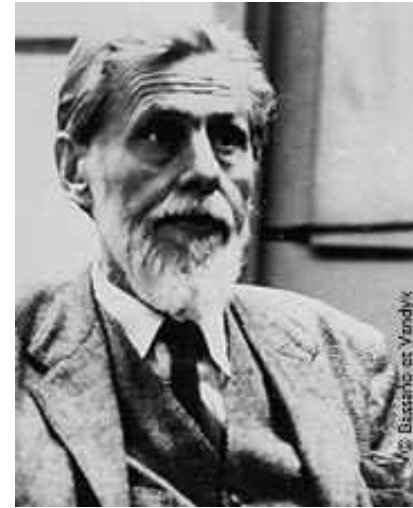
*Then took the other, as just as fair,
And having perhaps the better claim,
Because it was grassy and wanted wear...*



The map of Romania?

“The map is not the territory.” - Alfred Korzybski

What Is a Number, that a Man May Know It, and a Man, that He May Know a Number?



Warren S. McCulloch

Alfred Korzybski Memorial Lecture 1960, first published in: *General Semantics Bulletin*, No. 26/27, 1960. p. 7-18.



Lewis Carroll on abstractions

From *Sylvie and Bruno Concluded* by Lewis Carroll, first published in 1893.

Lewis Carroll - *The Complete Illustrated Works*. Gramercy Books, New York (1982). Page 727.

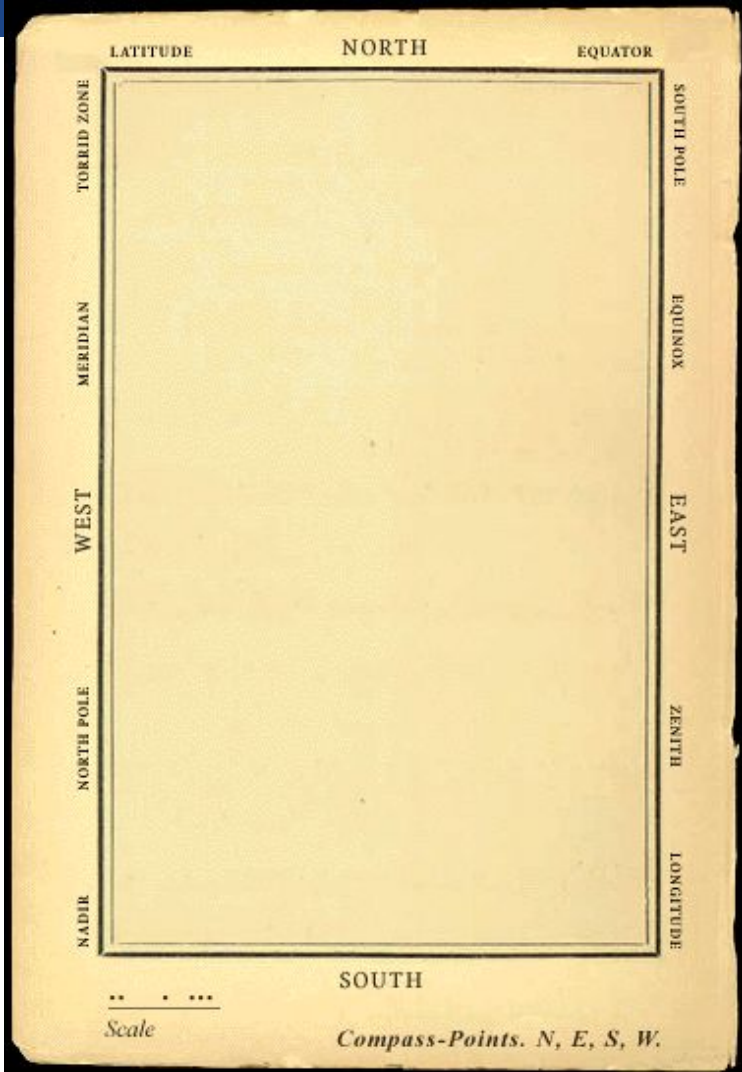
"That's another thing we've learned from your Nation," said Mein Herr, "map-making. But we've carried it much further than you. What do you consider the largest map that would be really useful?"

"About six inches to the mile."

"Only six inches!" exclaimed Mein Herr. "We very soon got to six yards to the mile. Then we tried a hundred yards to the mile. And then came the grandest idea of all! We actually made a map of the country, on the scale of a mile to the mile!"

"Have you used it much?" I enquired.

"It has never been spread out, yet," said Mein Herr: "the farmers objected: they said it would cover the whole country, and shut out the sunlight! So we now use the country itself, as its own map, and I assure you it does nearly as well."



*He had brought a large map
Representing the sea,
Without the least vestige of land:
And the crew were much pleased
When they found it to be
A map they could all understand.*

*"What's the good of Mercator's
North Poles and Equators,
Tropics, Zones and Meridian lines?"
So the Bellman would cry;
And the crew would reply,
"They are merely conventional signs!"*

*"Other maps are such shapes,
With their islands and capes!
But we've got our brave captain
to thank" (So the crew would protest)
"That he's brought us the best --
A perfect and absolute blank!"*


the Bellman's Map from
"The Hunting of the Snark"
by Lewis Carroll

The Bellman's
Map, from *The
Hunting of the
Snark* by Lewis
Carroll
- Rendering by
Sharon Daniel



Ceci n'est pas une pipe.

René Magritte
1928–29, The
Treachery of
Images, *La
trahison des
images*.



**this wall has been
intentionally left blank.**

Banksy
(Attributed)

The physical symbol system hypothesis

"A physical symbol system has the necessary and sufficient means for general intelligent action."

Allen Newell and Herbert A. Simon, *"Computer Science as Empirical Inquiry: Symbols and Search,"* Communications of the ACM . vol. 19, No. 3, pp. 113-126, March, 1976.

The physical symbol system hypothesis (cont)

1. Intended definition of symbols: units like <chair>, <azalea>, combined via sentences to form richer sentences.

Why is this the definition?

2. The weaker definition has symbols like {0, 1}.

Does the hypothesis mean anything in this case?

The physical symbol system hypothesis (cont)

1. Intended definition of symbols: units like <chair>, <azalea>, combined via sentences to form richer sentences.

Why is this the definition?

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Does the hypothesis mean anything in this case?

Brooks: Elephants don't play chess <http://people.csail.mit.edu/brooks/papers/elephants.pdf>

"...the world is its own best model. It is always exactly up to date. It always has every detail there is to be known. The trick is to sense it appropriately and often enough."

Sources:

Robert Frost's Poem: <http://www.poetryfoundation.org/poem/173536>

Background image: <http://image.slidesharecdn.com>

McCulloch Photo:

<http://www.i-programmer.info/babbages-bag/325-mcculloch-pitts-neural-net-works.html>

Lewis Carroll image:

<http://s1234.photobucket.com/user/Mortskcab/media/carroll.gif.html>

Hunting of the Snark: <https://people.duke.edu/~ng46/topics/lewis-carroll.htm>

Sources:

The treachery of images image:

<http://www.wikiart.org/en/rene-magritte/the-treachery-of-images-this-is-not-a-pipe-1948>

The graffiti:

<http://minimalillusion.tumblr.com/post/417489308/this-wall-has-been-intentionally-left-blank>