

Self-Reference and Diagonalisation

Joël A. Doat

Technische Universität Darmstadt

Follow this and additional works at: <https://scholarship.claremont.edu/jhm>



Part of the [Arts and Humanities Commons](#), and the [Logic and Foundations Commons](#)

Recommended Citation

Joël A. Doat, "Self-Reference and Diagonalisation," *Journal of Humanistic Mathematics*, Volume 13 Issue 1 (January 2023), pages 297-298. DOI: 10.5642/jhummath.VKES4181. Available at: <https://scholarship.claremont.edu/jhm/vol13/iss1/24>

©2023 by the authors. This work is licensed under a Creative Commons License.

JHM is an open access bi-annual journal sponsored by the Claremont Center for the Mathematical Sciences and published by the Claremont Colleges Library | ISSN 2159-8118 | <http://scholarship.claremont.edu/jhm/>

The editorial staff of JHM works hard to make sure the scholarship disseminated in JHM is accurate and upholds professional ethical guidelines. However the views and opinions expressed in each published manuscript belong exclusively to the individual contributor(s). The publisher and the editors do not endorse or accept responsibility for them. See <https://scholarship.claremont.edu/jhm/policies.html> for more information.

Self-Reference and Diagonalisation

Joël A. Doat¹

joelandre.doat@gmail.com

Do you know when you know everything?
Or is knowing the unknown something?
Do you know when you know nothing?
Or doesn't this knowledge rely on anything?
Thoughts perform acrobatics
when in self-reference.
A look at mathematics
and infinity makes a difference.
First example: machine automatics
where to find evidence.

Is it stoppable when encodable
in itself as insertion?
A problem solvable for some predicable
of finite instantiation.
Neither halttable nor decidable
for infinite recursion.
Because assumable if it's computable
then look at the version.
One is programmable becoming loopable
in destructive perversion.
An argument undeniable when diagonalisable
is terminating the motion,
while unthinkable also unendable.
Therefore a solution
which is undisputable turingable.
It follows the assertion.

Away from machines, back to naturals.
Maybe horizontal sequences in vertical sequentials?

¹ Even though Joël Doat pursued a career in software development after his studies, one of his main interests still lies at the intersection of mathematics and art. This poem was written as an exercise in an introductory course on mathematical logic highlighting Epimenides', Cantor's, and Turing's contributions to self-reference.

Now suppose
ones and zeros
playing the key roles.
Align those
in several rows.
Then diagonally transpose.
Here it goes!
When they compose,
it shows
unwanted weirdos
in their outsider pose.

A path represents
what uncountably defines
Cantor's proof extends
broader cardinality confines
finishing his arguments.
Look at the last three lines,
the respective contents
and word combines.
This is how to diagonalise.

Get ready,
this one is tough.
'cause infinity
isn't always enough.
Talking about the original Or.D.
and no... not a speech disorder.
His rhymes teach how to well-order.
Not only ordinal words, but transitive letters.
No one reduces him to a set when he enters.
Nobody else containing his skills at this efficiency.
For you simply too high classy.
He is the only true Or.D.

All this rationalise
a poem to exercise.
Self-reference it memorialise.
Paradoxes it implies.
Ending with overemphasise:
Poems tell lies...