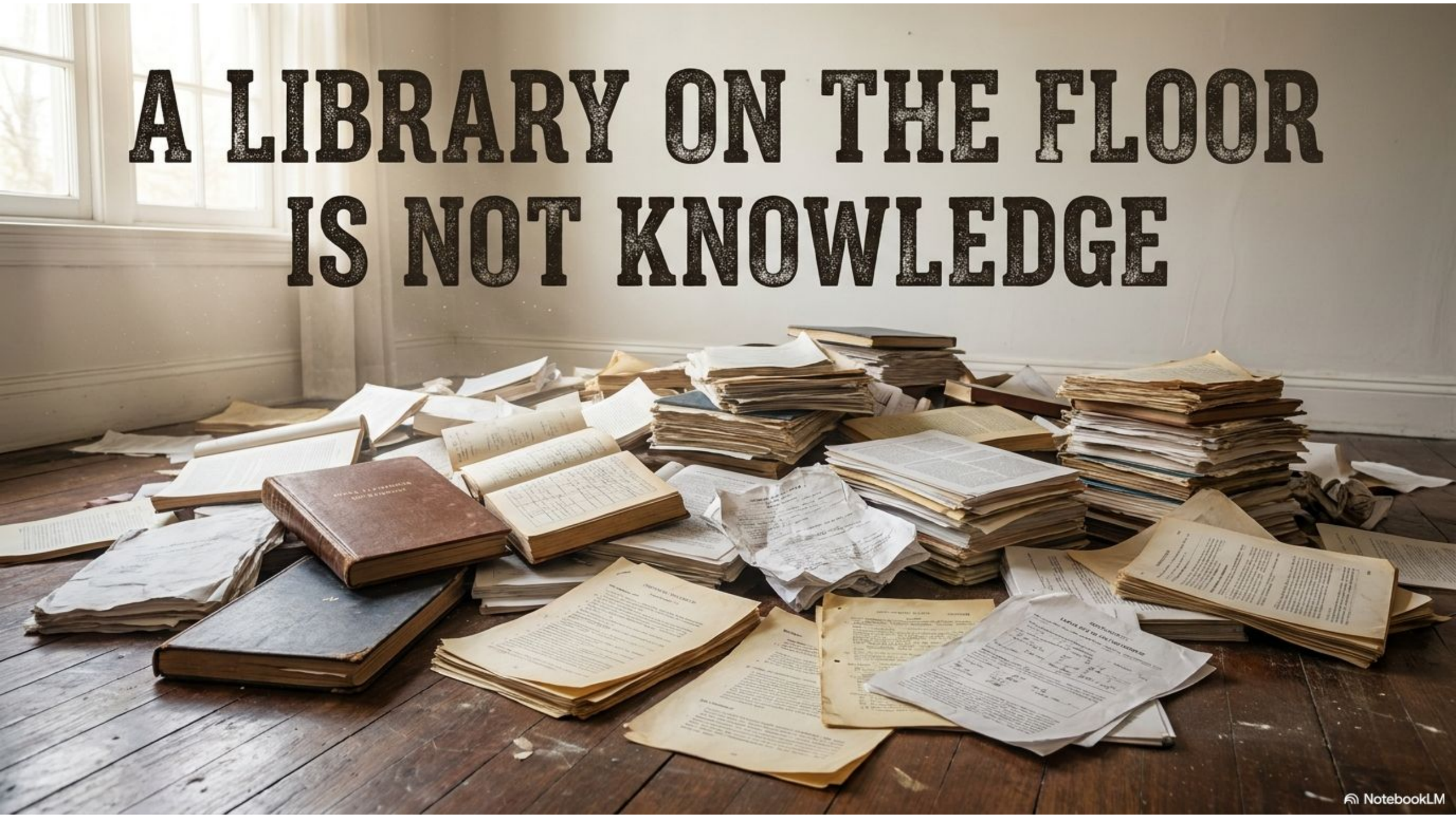
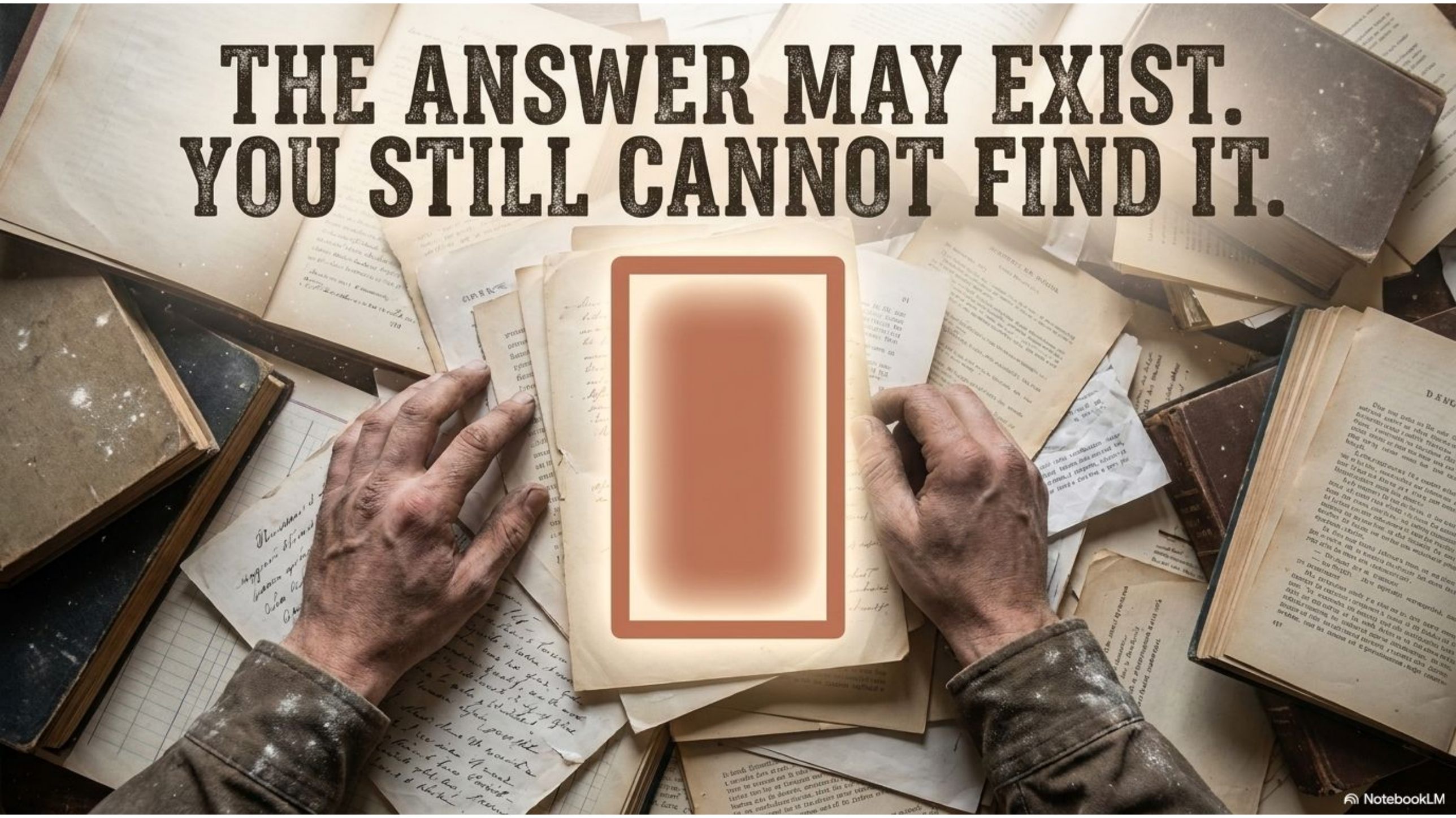
METADATA AS A NAM

From data Context to Virtual Control Groups

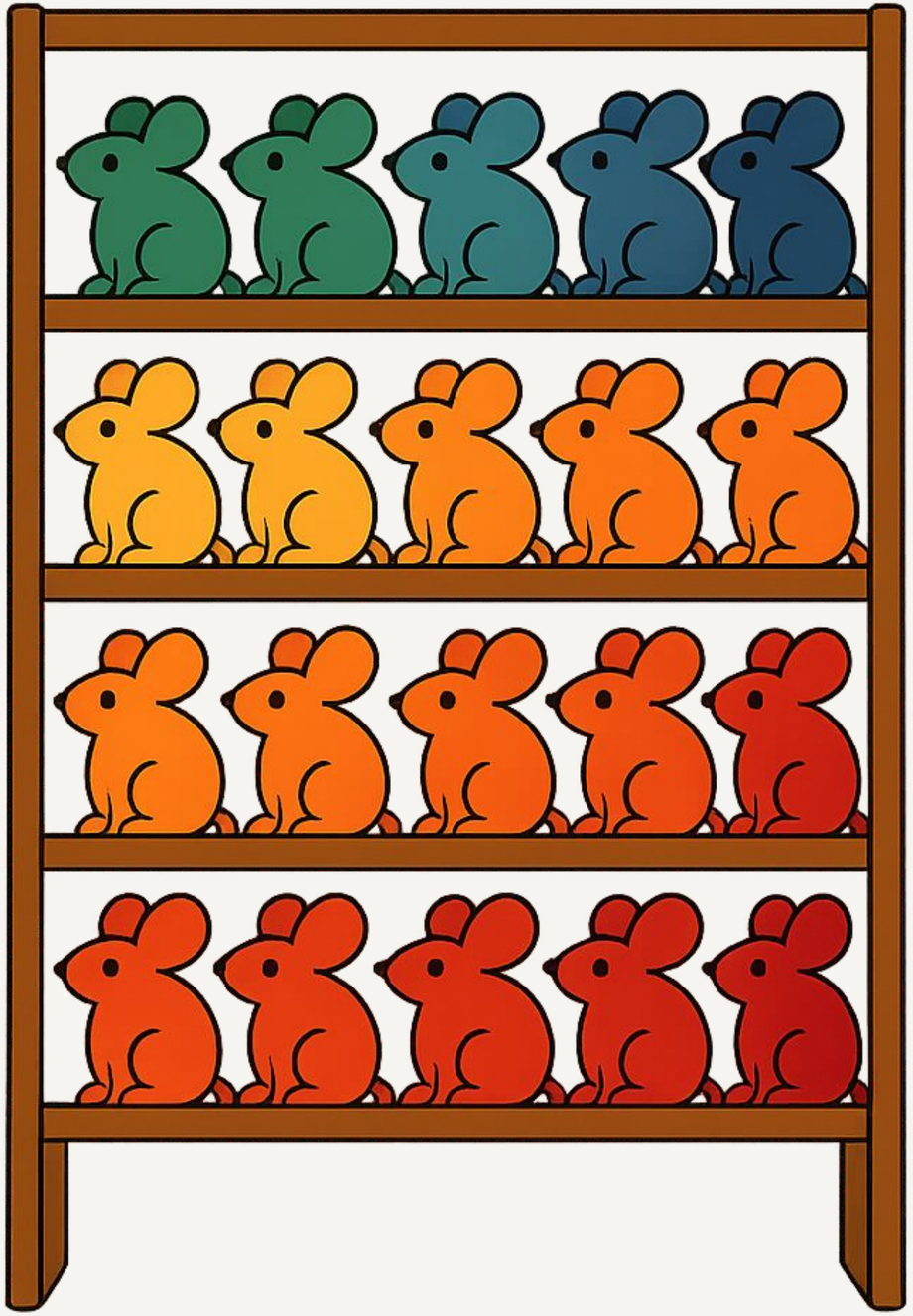
Damien Huzard
SCAND-LAS
28-06-2026

TECNIPLAST GROUP NEURO NAUTIX


A LIBRARY ON THE FLOOR
IS NOT KNOWLEDGE
NotebookLM

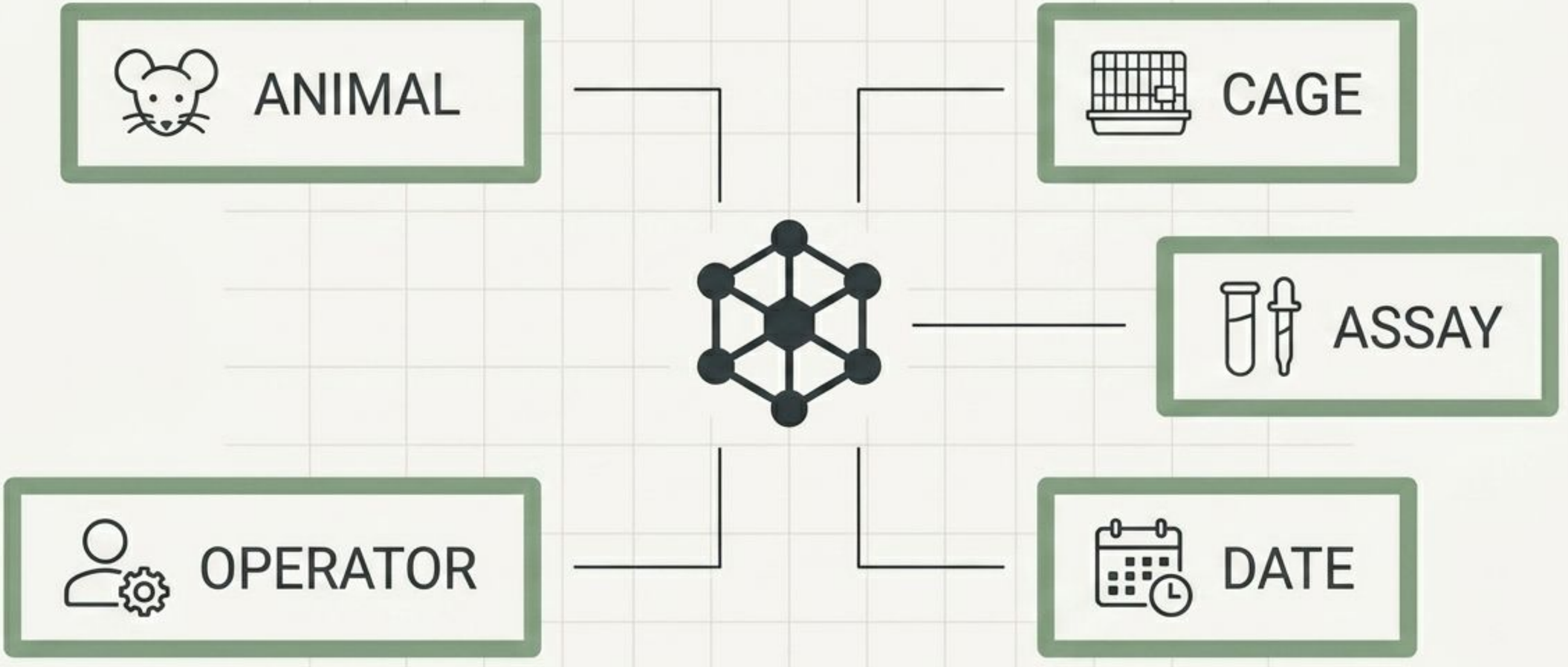

THE ANSWER MAY EXIST.
YOU STILL CANNOT FIND IT.
NotebookLM

CONTEXT BUILDS THE SHELF

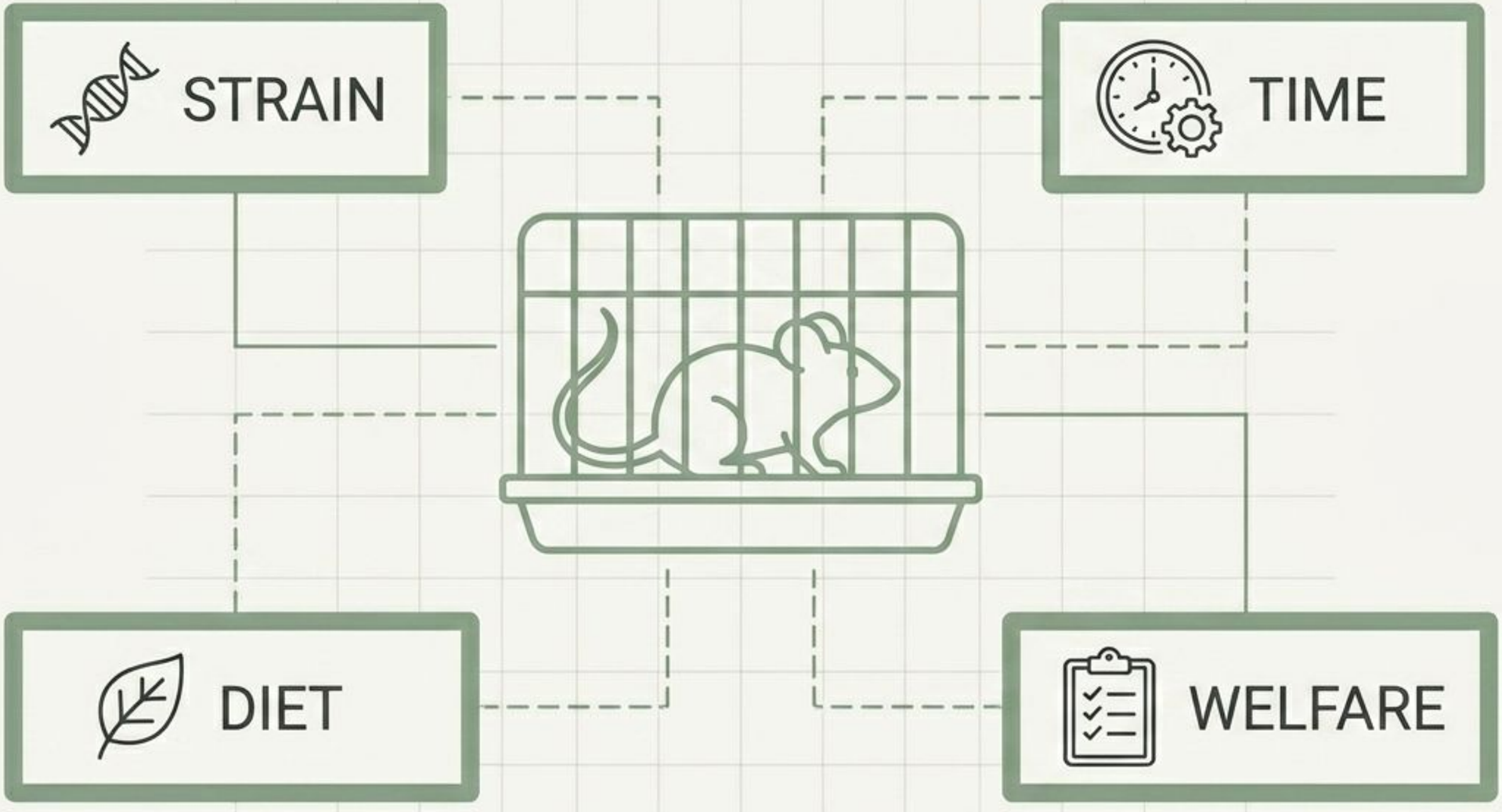


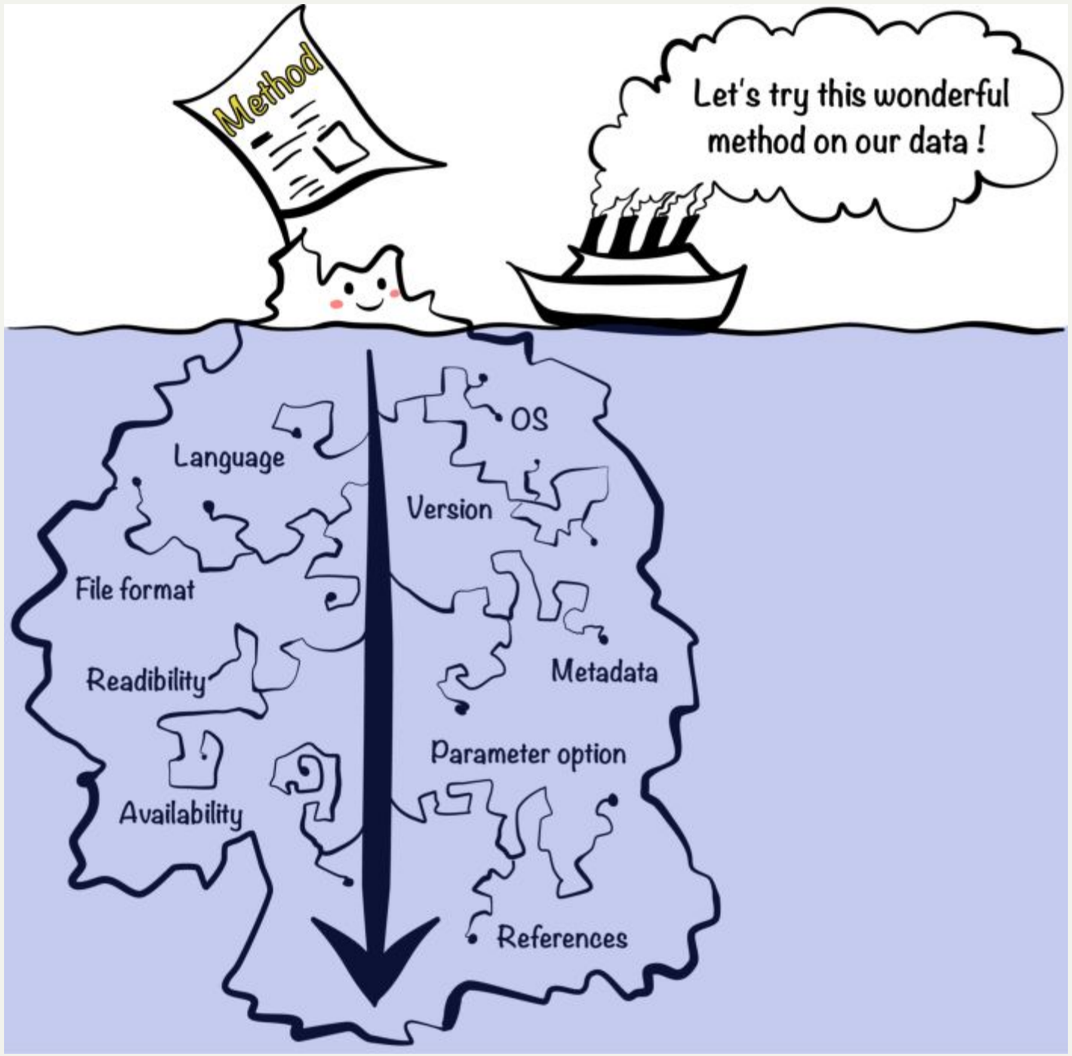
METADATA

The context that makes evidence reusable



OUTCOME + CONTEXT = EVIDENCE

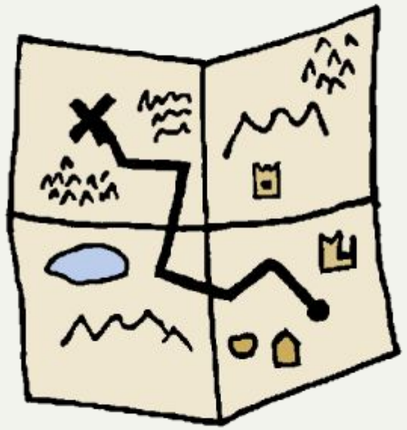




DOI:10.1101/143503

DATA

METADATA



From dataedo

Comment | Open access | Published: 15 March 2016

The FAIR Guiding Principles for scientific data management and stewardship

Mark D. Wilkinson, Michel Dumontier, IJsbrand Jan Aalbersberg, Gabrielle Appleton, Myles Axton, Arie Baak, Niklas Blomberg, Jan-Willem Boiten, Luiz Bonino da Silva Santos, Philip E. Bourne, Jildau Bouwman, Anthony J. Brookes, Tim Clark, Mercè Crosas, Ingrid Dillo, Olivier Dumon, Scott Edmunds, Chris T. Evelo, Richard Finkers, Alejandra Gonzalez-Beltran, Alasdair J.G. Gray, Paul Groth, Carole Goble, Jeffrey S. Grethe, ... Barend Mons + Show authors

Scientific Data **3**, Article number: 160018 (2016) | Cite this article

https://doi.org/10.1038/sdata.2016.18

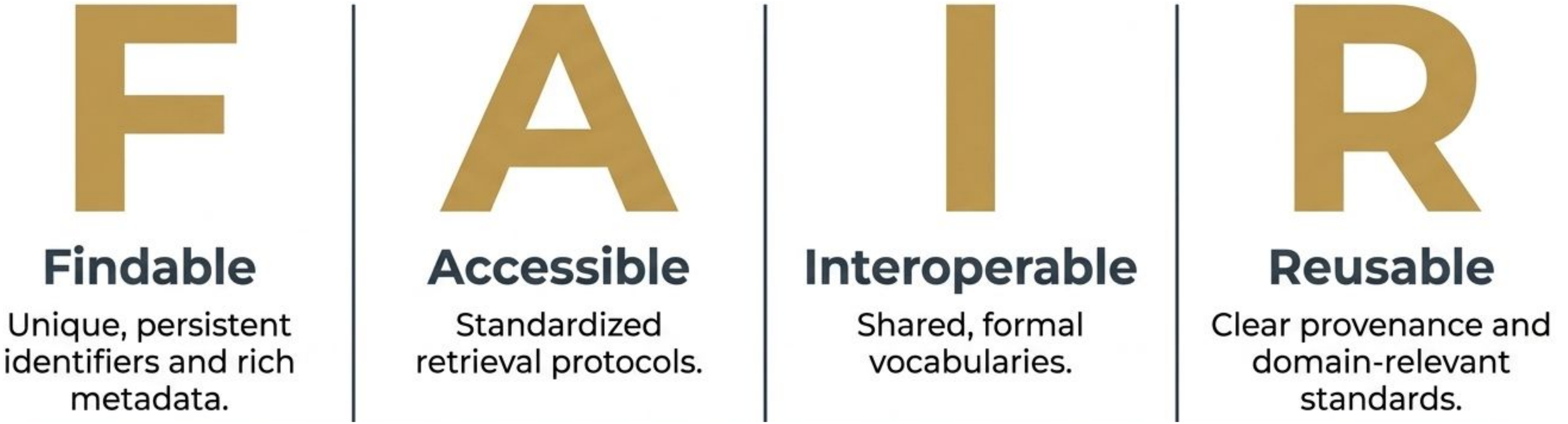
FINDABLE

ACCESSIBLE

INTEROPERABLE

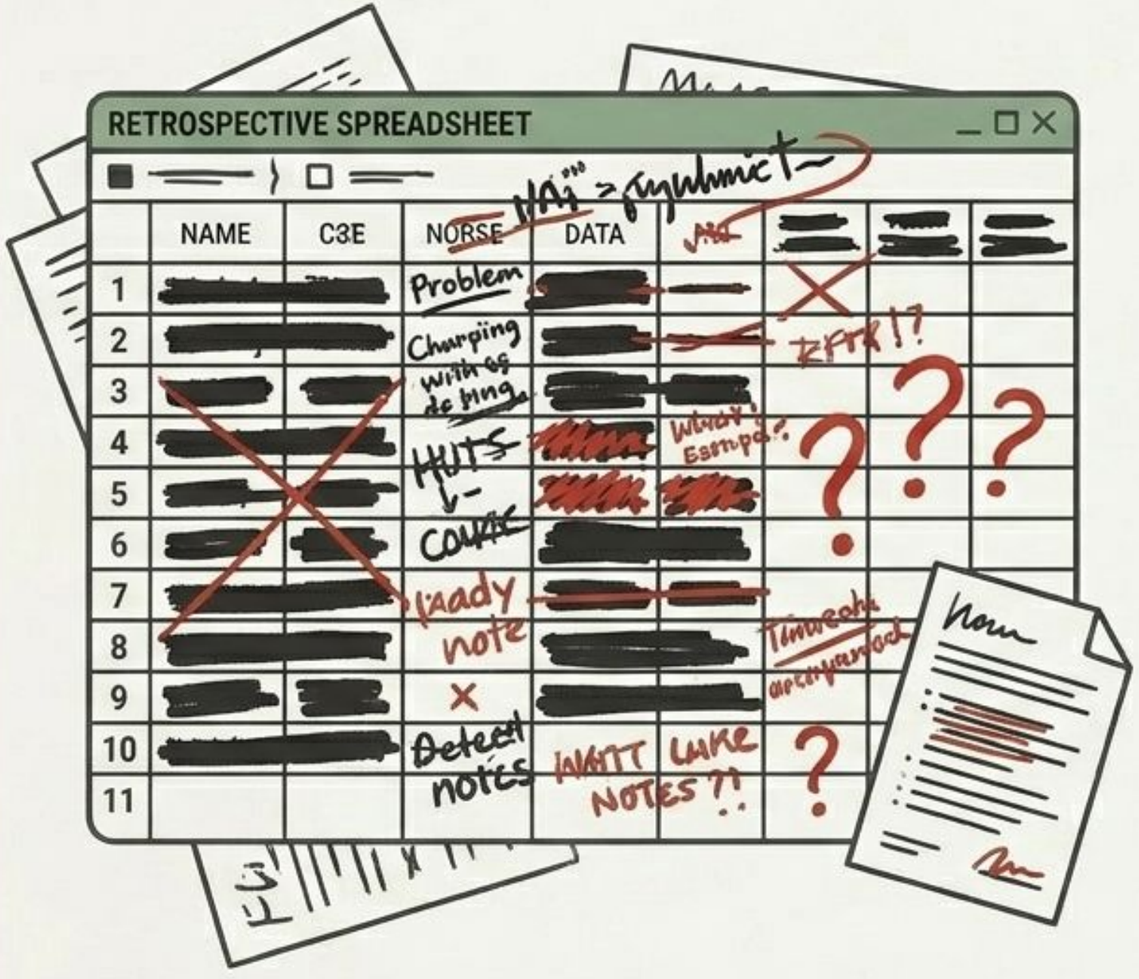
REUSABLE

https://doi.org/10.1038/sdata.2016.18

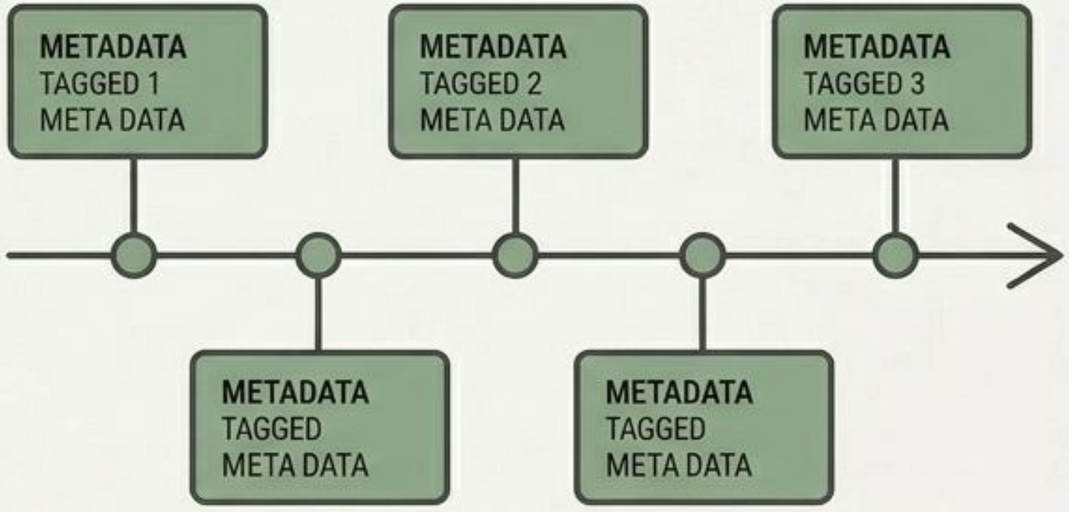


https://doi.org/10.1038/sdata.2016.18

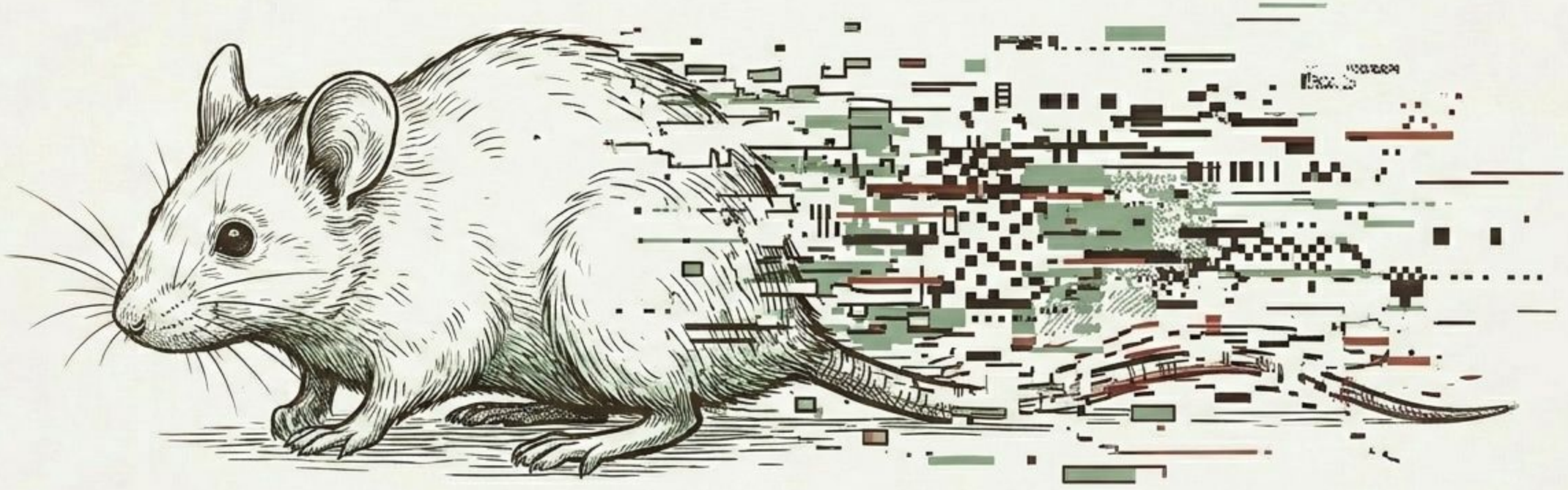
NOT AFTER THE EXPERIMENT



FROM THE FIRST CAGE EVENT

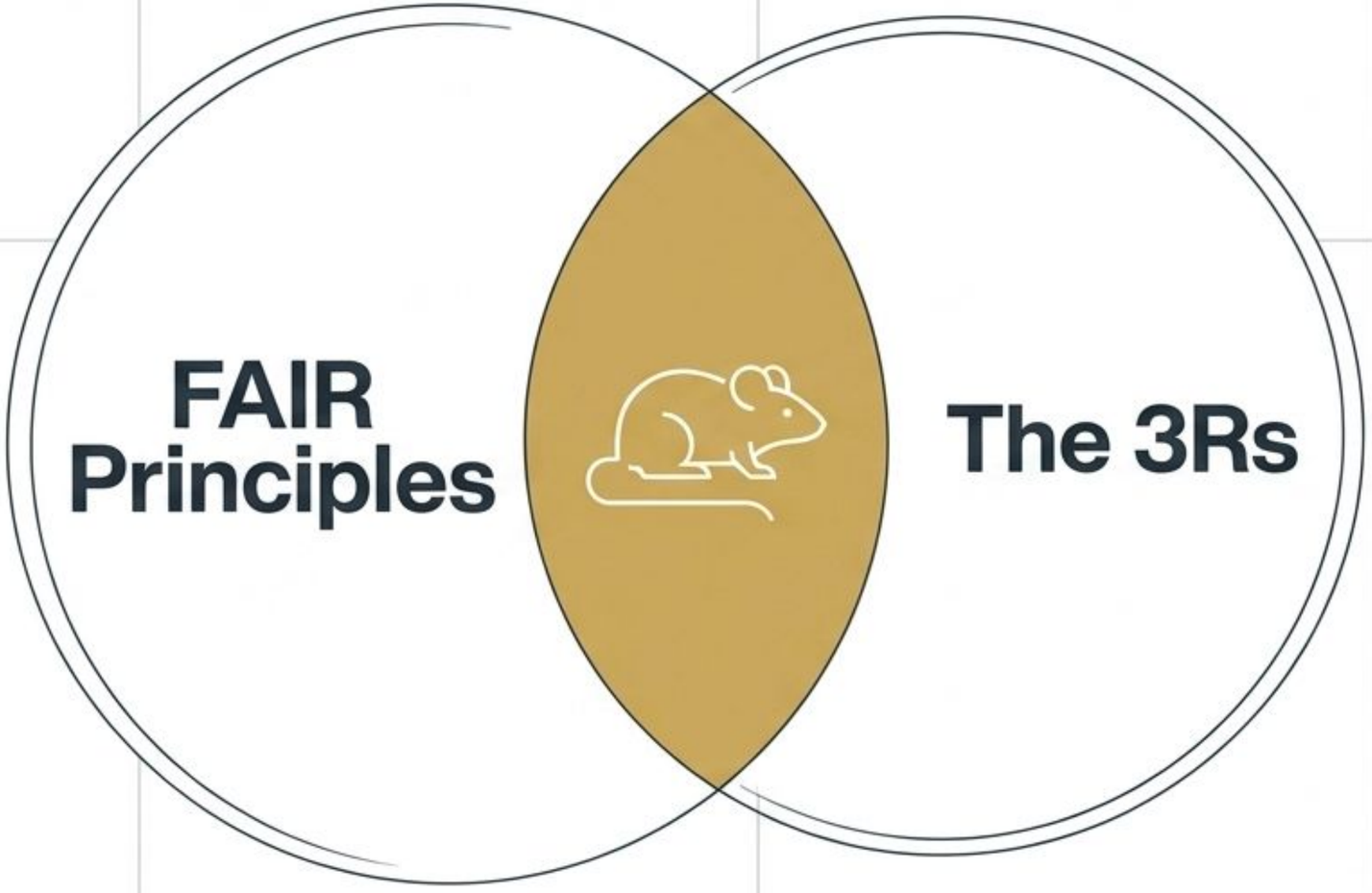


UNUSABLE DATA
WASTE ANIMAL LIVES



WellFAIR

Data Welfare is Animal Welfare



Neuroscience Applied
Volume 5, 2026, 106998

Short Communication

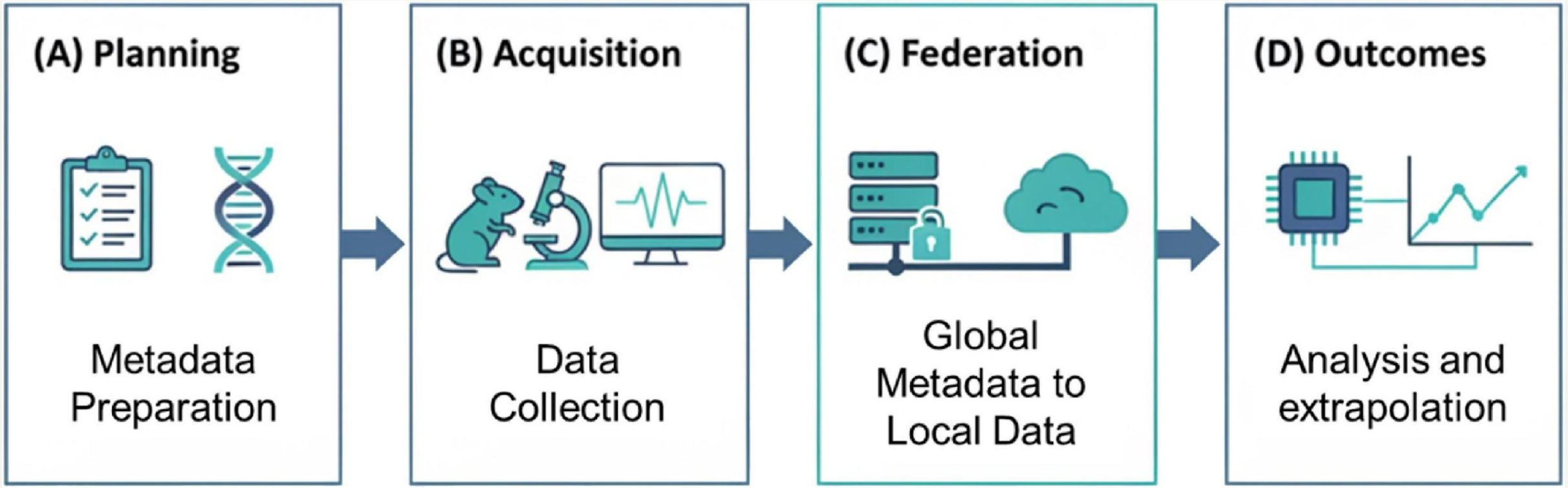
Data welfare is animal welfare: Building a WellFAIR research ecosystem

Benoit Petit-Demoulière [a], Damien Huzard [b c]

[a] Université de Strasbourg, CNRS UAR 2062 PHEN-ICS, INSERM US66, CELPHEDIA, France
[b] Neuronautix, Montpellier, France
[c] Metadatapp, Montpellier, France

Received 12 December 2025, Revised 9 February 2026, Accepted 10 March 2026, Available online 14 March 2026, Version of Record 19 March 2026.

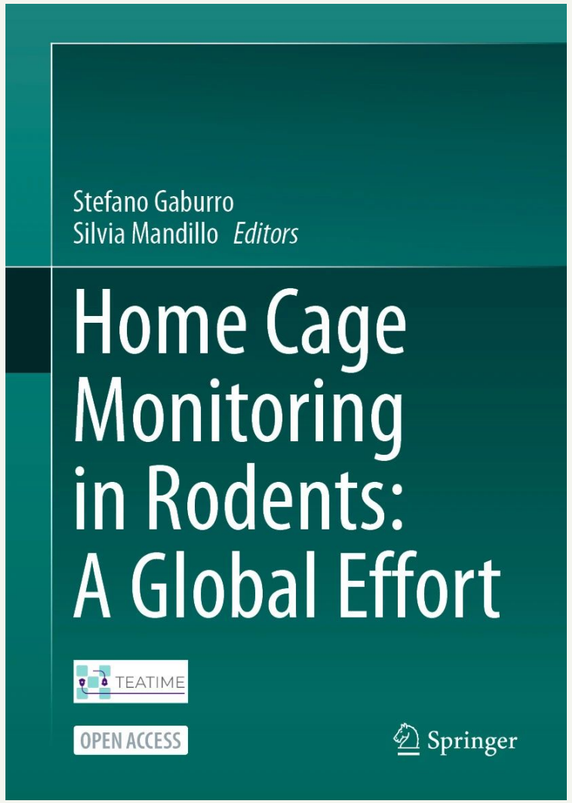
https://doi.org/10.1016/j.nsa.2026.10699



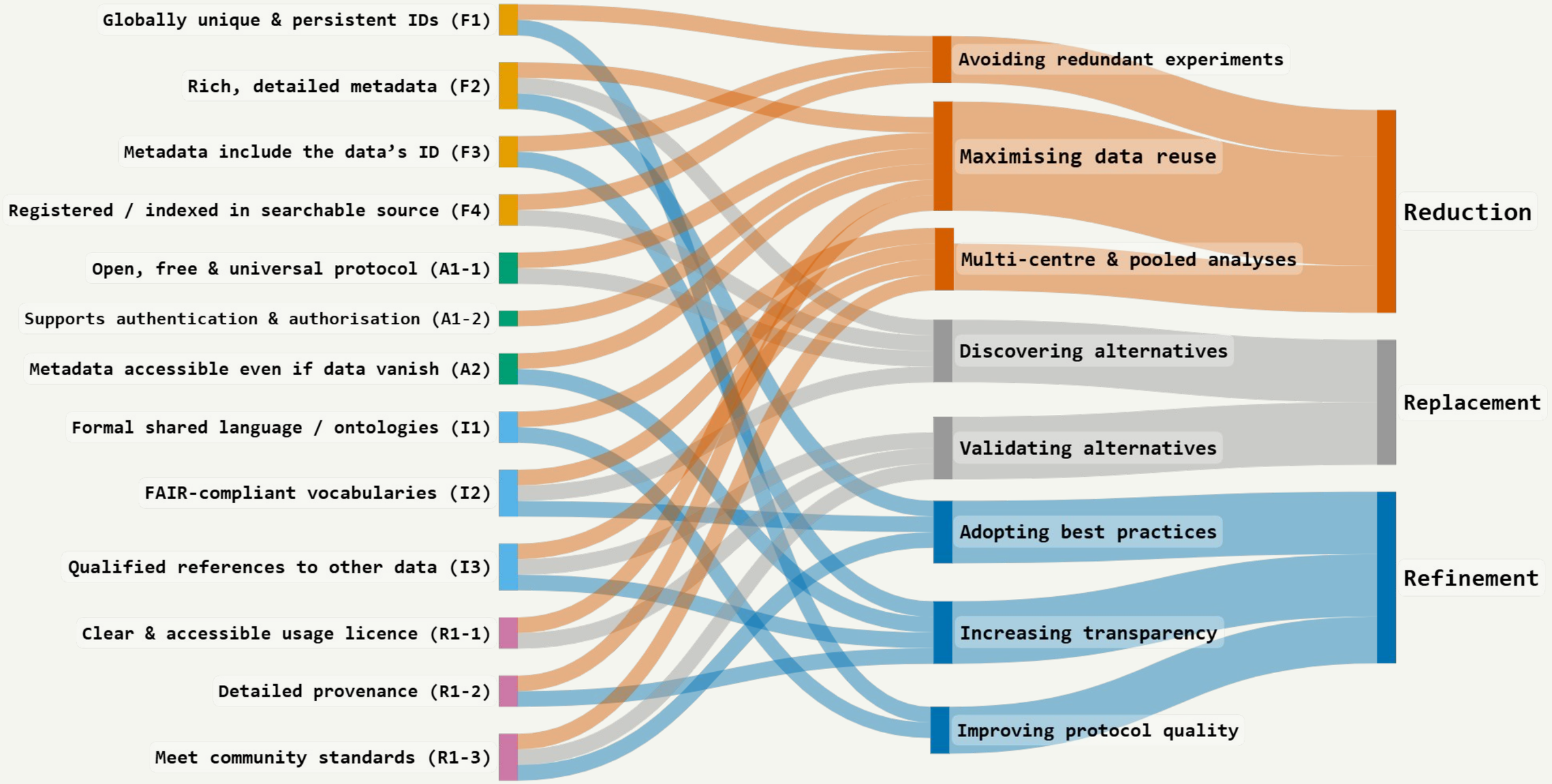
https://doi.org/10.1016/j.nsa.2026.10699

Data Sharing and Metadata

Hamish Forrest, Damien Huzard, Leonardo Restivo,
Szczepan W. Baran, and Benoit Petit-Demoulière

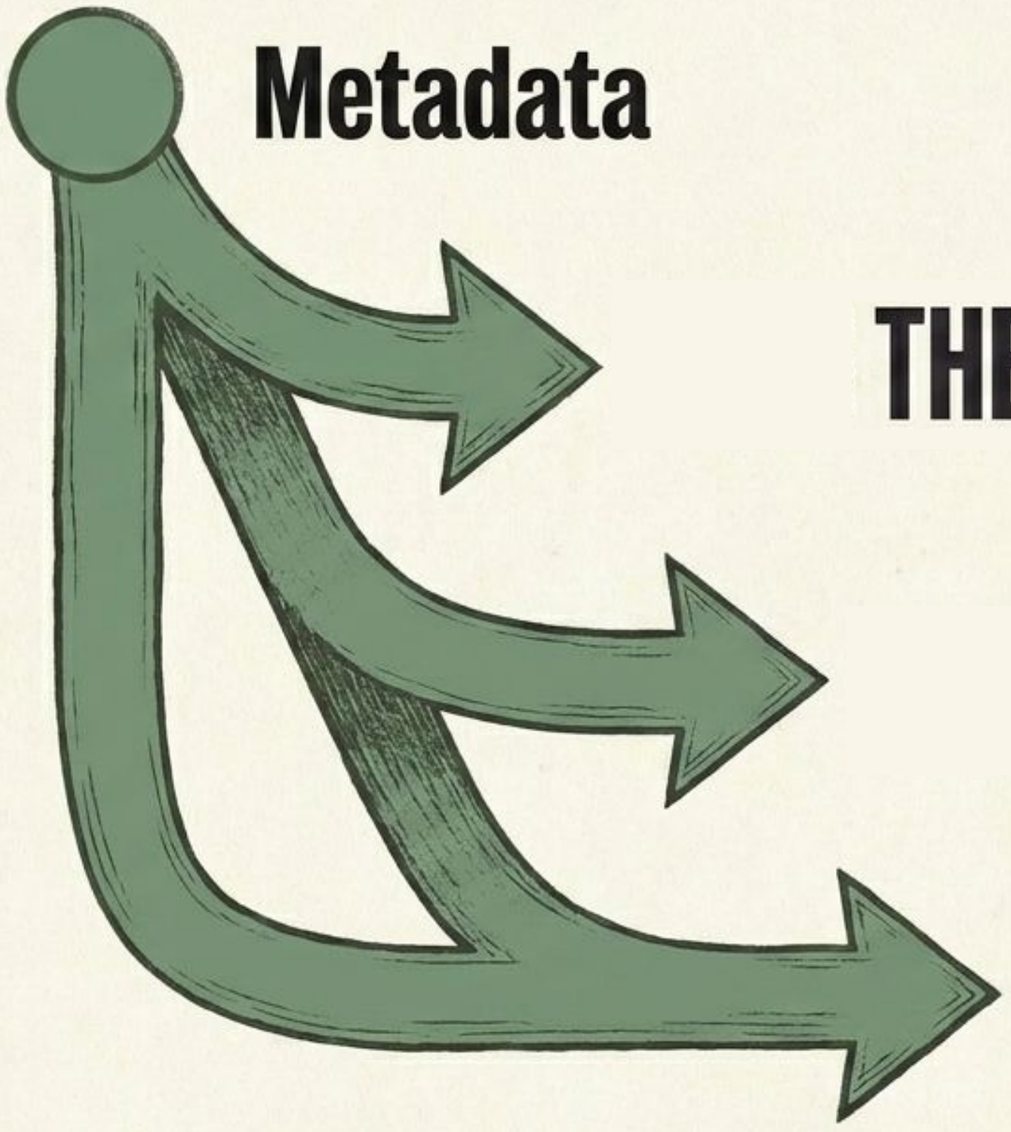


S. Gaburro, S. Mandillo (eds.), *Home Cage Monitoring in Rodents: A Global Effort*, https://doi.org/10.1007/978-3-032-19781-8_10 **Springer Nature**



https://doi.org/10.1007/978-3-032-19781-8_10

METADATA IS A NAM



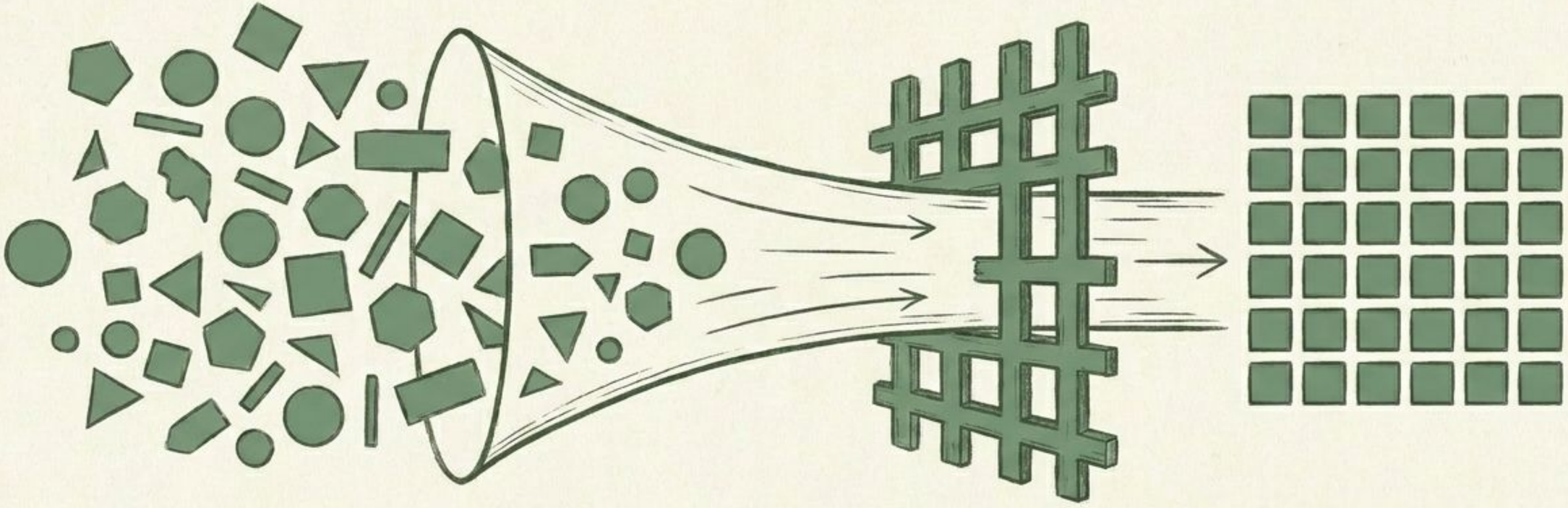
THE METHOD

THE EVIDENCE

THE ANIMAL

VIRTUAL CONTROL GROUPS

Controls selected by context



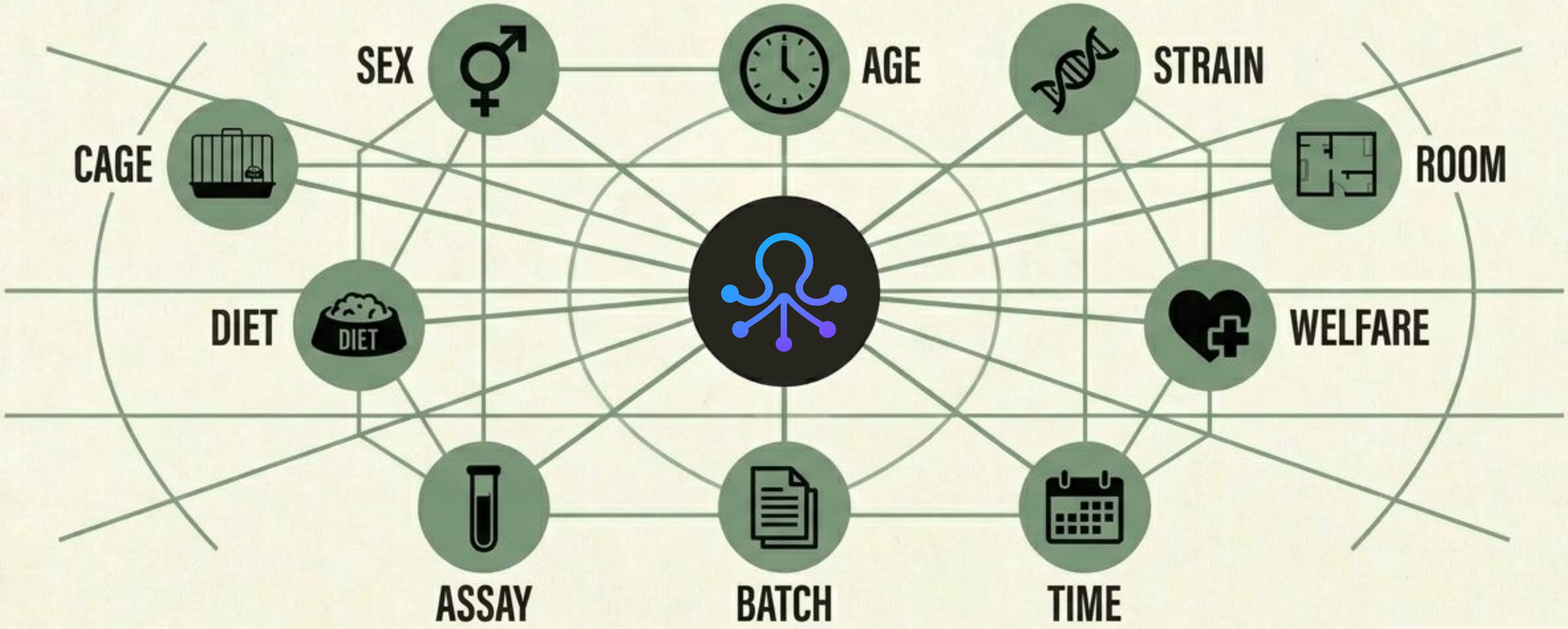
Unstructured Historical Controls

Metadata Filter

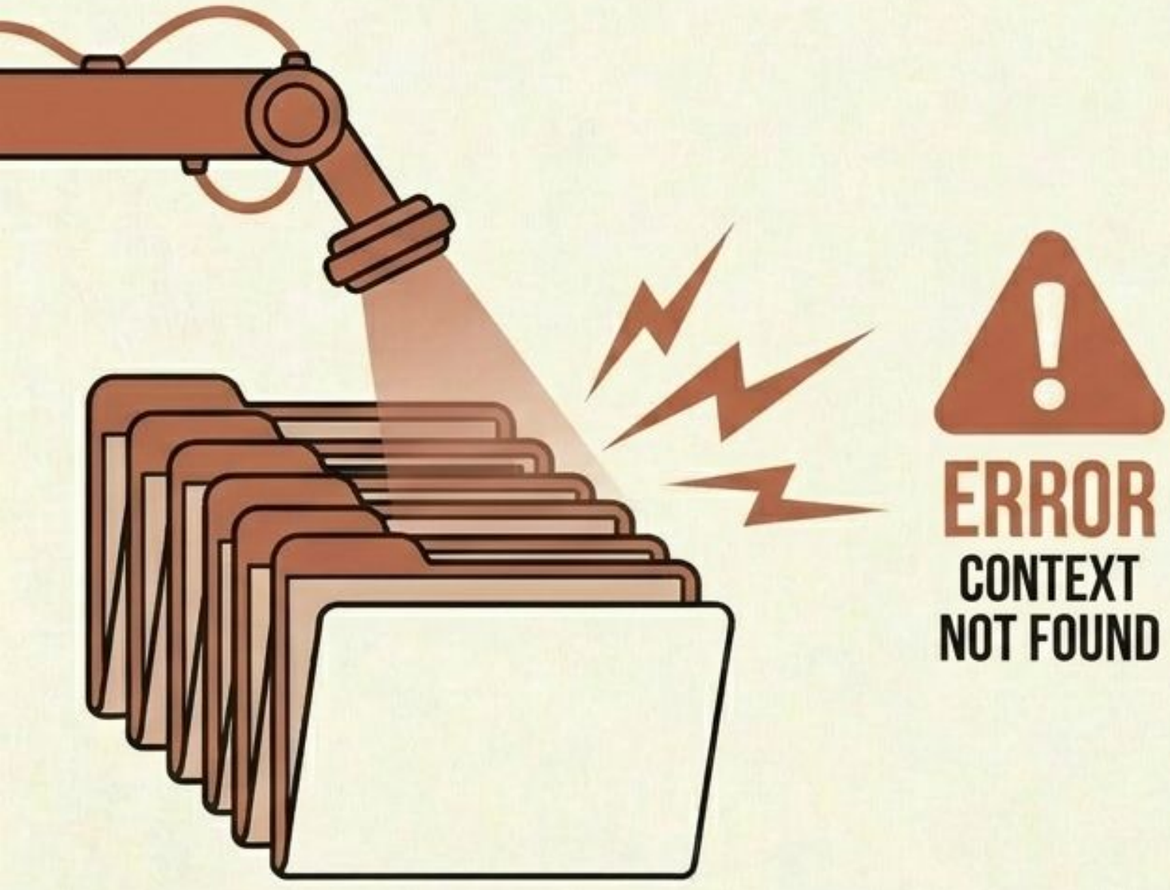
Qualified Virtual Comparator Pool

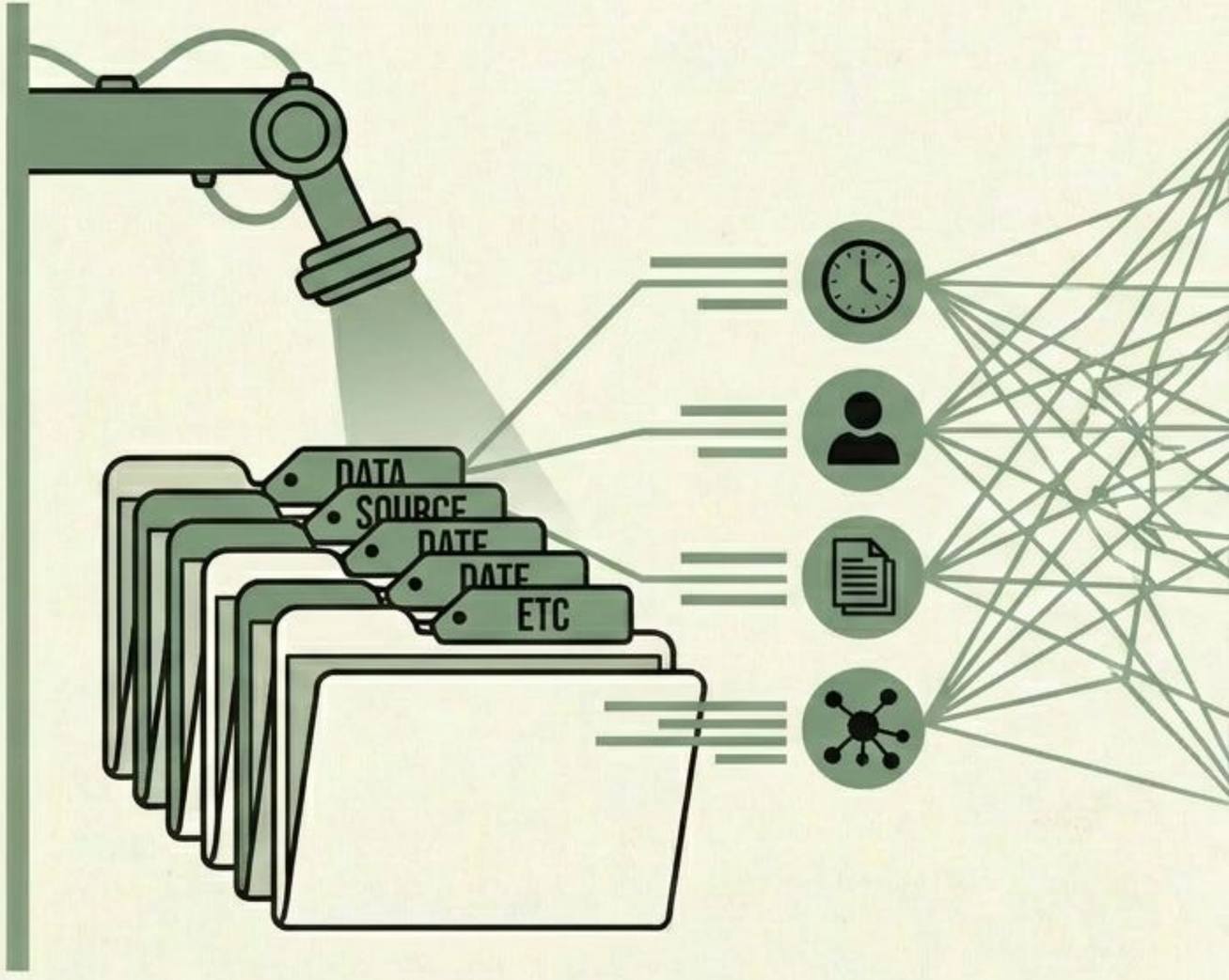
ELIGIBILITY DIMENSIONS

A metadata constellation defining comparability



AI CANNOT RECOVER
MISSING CONTEXT

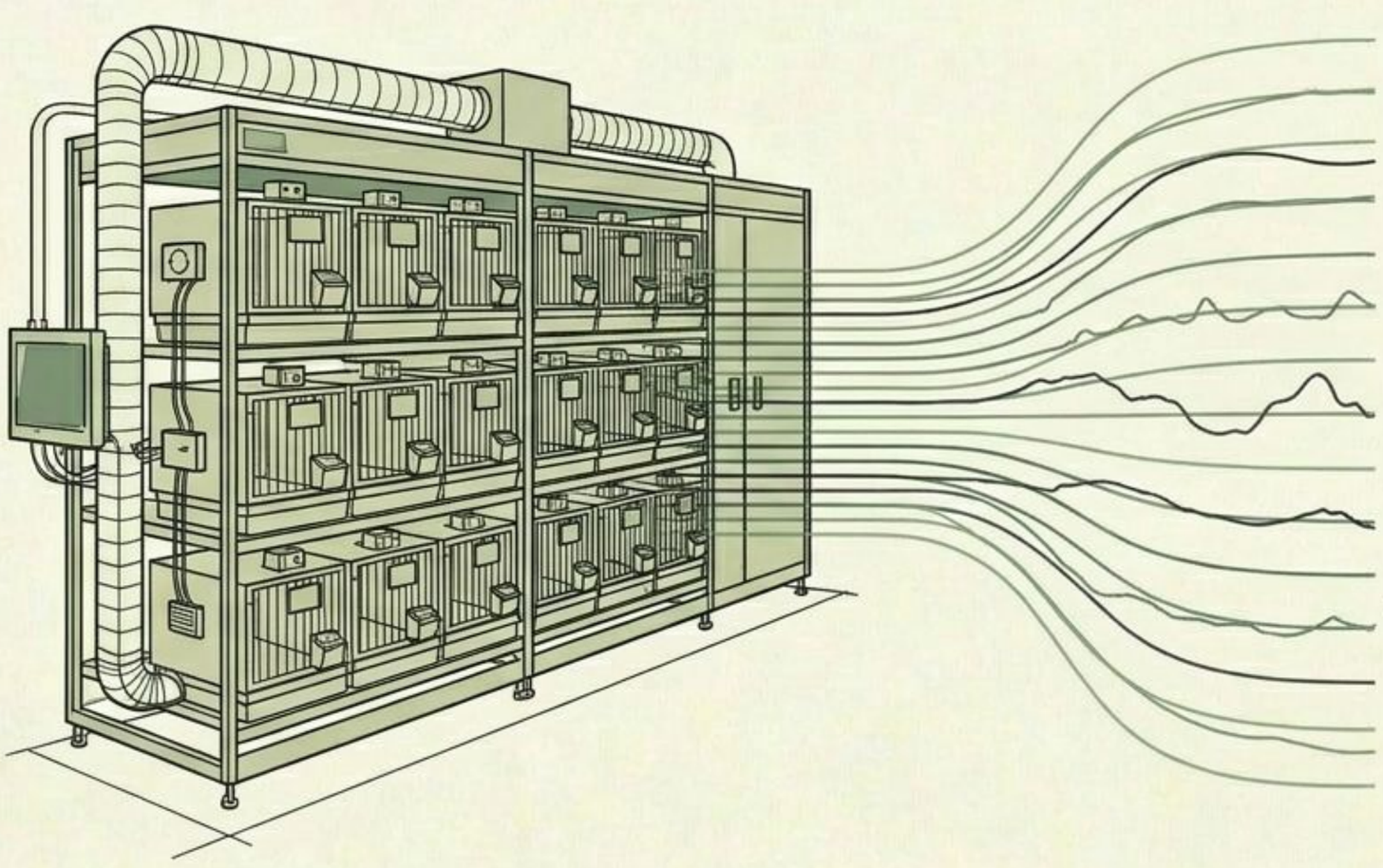


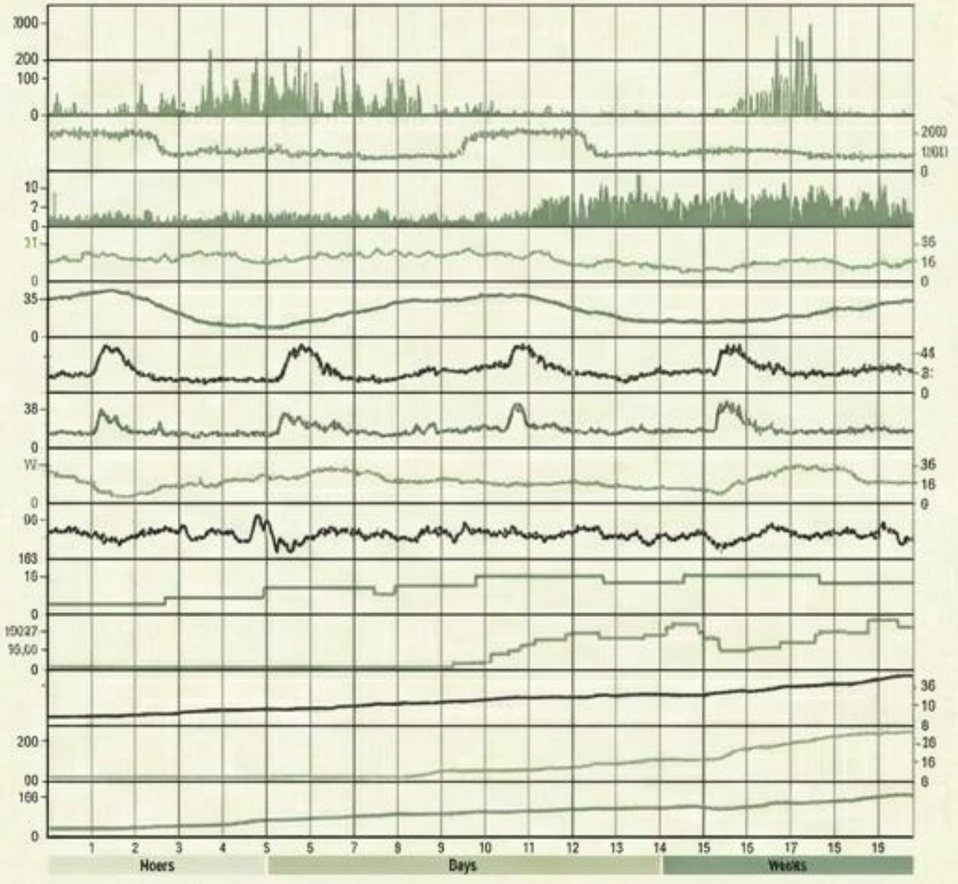


TECNIPLAST GROUP **DVC**

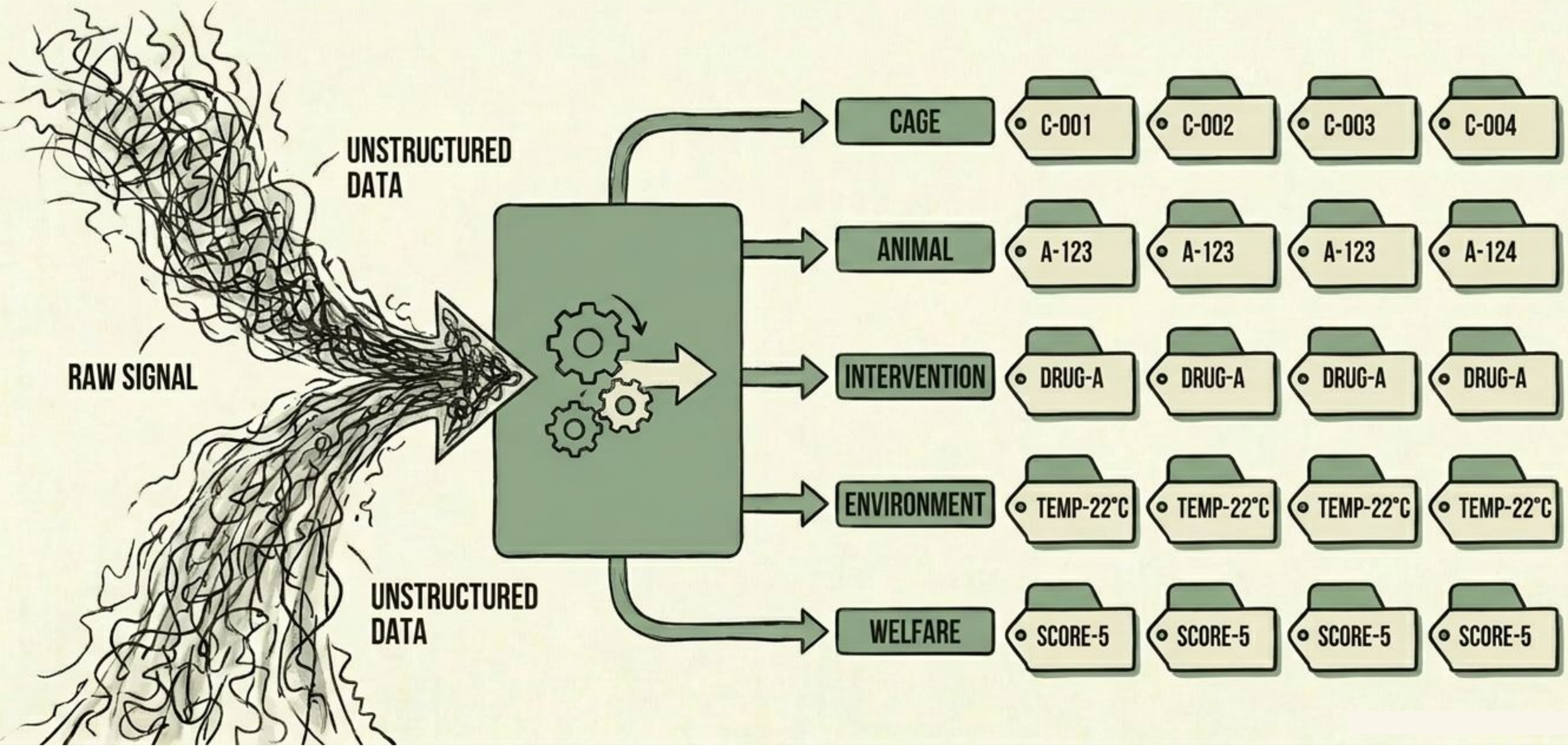
NEURO NAUTIX

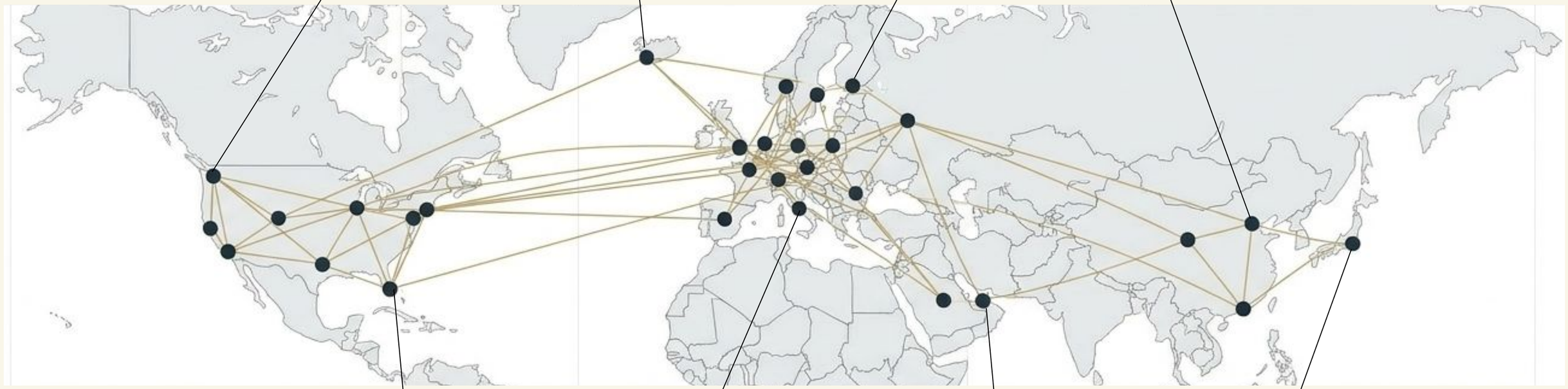
Continuous home-cage context

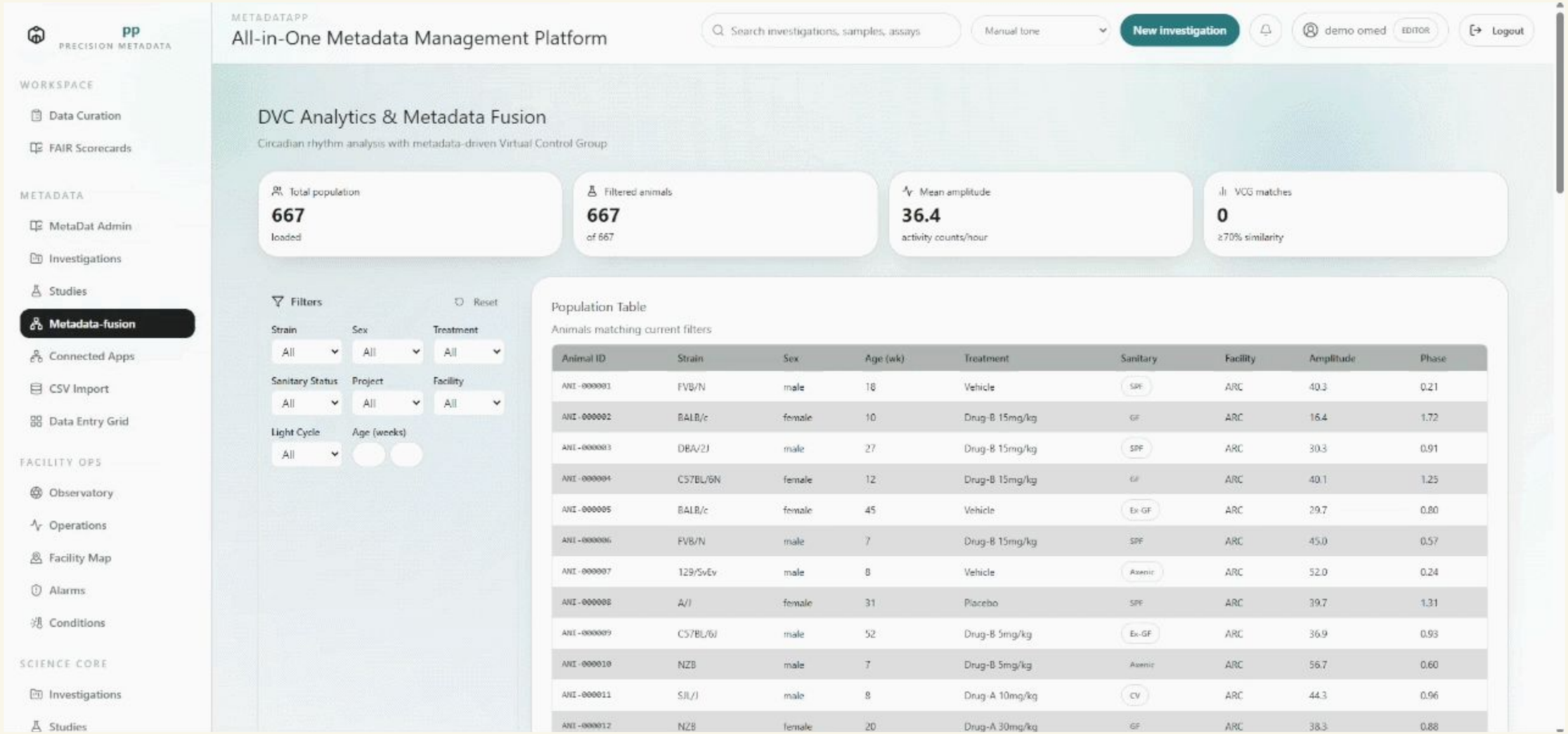




DATA ARE NOT METADATA




Temp = 25°
Strain = C576
Int. = Drug C
Temp = 23°
Strain = C57
Int. = Drug A
Temp = 21°
Strain = C57
Int. = Drug A
Temp = 24°
Strain = Balb
Int. = Drug B
Temp = 25°
Strain = Shank3
Int. = Drug B
Temp = 23°
Strain = C57
Int. = Drug C
Temp = 22°
Strain = Balb
Int. = Drug B
Temp = 20°
Strain = Shank
Int. = Drug C


PP
PRECISION METADATA
METADATAPP
All-in-One Metadata Management Platform
Search investigations, samples, assays
Manual tone
New investigation
demo omed
EDITOR
Logout
WORKSPACE
Data Curation
FAIR Scorecards
METADATA
MetaDat Admin
Investigations
Studies
Metadata-fusion
Connected Apps
CSV Import
Data Entry Grid
FACILITY OPS
Observatory
Operations
Facility Map
Alarms
Conditions
SCIENCE CORE
Investigations
Studies
DVC Analytics & Metadata Fusion
Circadian rhythm analysis with metadata-driven Virtual Control Group
Total population
667
loaded
Filtered animals
667
of 667
Mean amplitude
36.4
activity counts/hour
VCG matches
0
≥70% similarity
Filters
Reset
Strain
Sex
Treatment
Sanitary Status
Project
Facility
Light Cycle
Age (weeks)
Population Table
Animals matching current filters
Animal ID
Strain
Sex
Age (wk)
Treatment
Sanitary
Facility
Amplitude
Phase
ANI-000001 FVB/N male 18 Vehicle SPF ARC 40.3 0.21
ANI-000002 BALB/c female 10 Drug-B 15mg/kg GF ARC 16.4 1.72
ANI-000003 DBA/2J male 27 Drug-B 15mg/kg SPF ARC 30.3 0.91
ANI-000004 C57BL/6N female 12 Drug-B 15mg/kg GF ARC 40.1 1.25
ANI-000005 BALB/c female 45 Vehicle Ex-GF ARC 29.7 0.80
ANI-000006 FVB/N male 7 Drug-B 15mg/kg SPF ARC 45.0 0.57
ANI-000007 129/SvEv male 8 Vehicle Axenic ARC 52.0 0.24
ANI-000008 A/J female 31 Placebo SPF ARC 39.7 1.31
ANI-000009 C57BL/6J male 52 Drug-B 5mg/kg Ex-GF ARC 36.9 0.93
ANI-000010 NZB male 7 Drug-B 5mg/kg Axenic ARC 56.7 0.60
ANI-000011 SJL/J male 8 Drug-A 10mg/kg CV ARC 44.3 0.96
ANI-000012 NZB female 20 Drug-A 30mg/kg GF ARC 38.3 0.88

Acknowledgements

NEURO NAUTIX

Damien Huzard

damien.huzard@gmail.com
neuronautix@gmail.com
Linkedin: Dhuzard

TECNIPLAST GROUP

Giorgio Rosati

Benoit petit-demouliere
Stefano Gaburro
Leonardo Restivo

Metadatapp

anibio

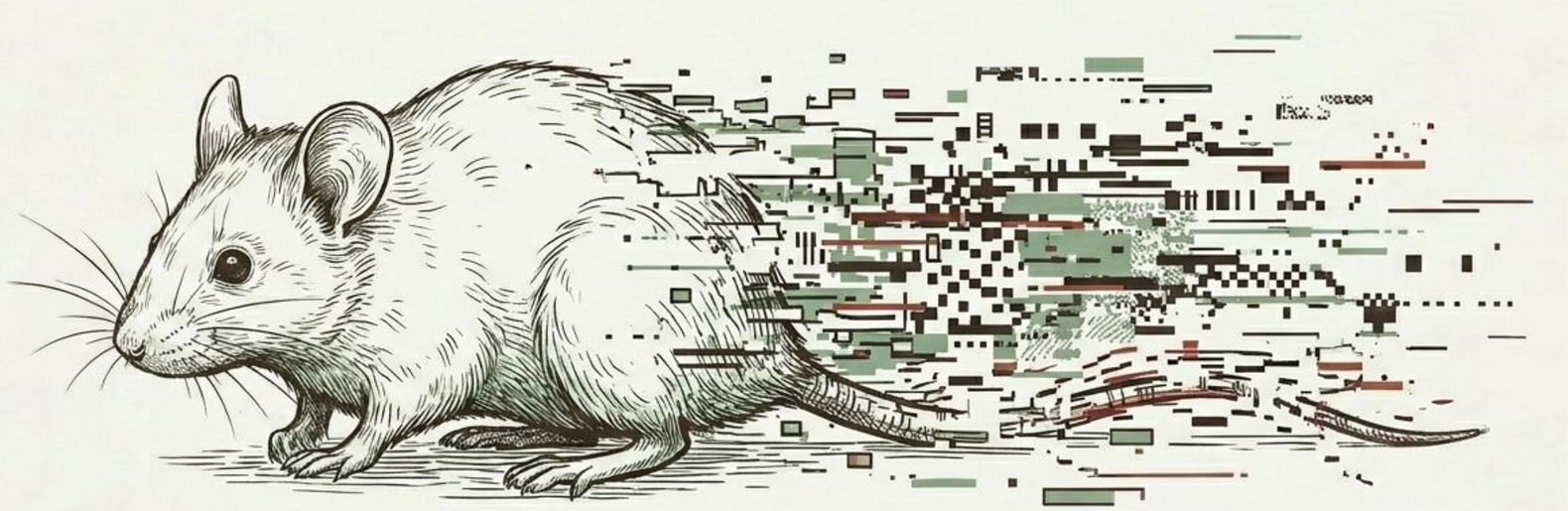
eLabFTW

SoftMouse.NET

LIRMM

OLDEN LABS

METOFICO



PISTOIA ALLIANCE