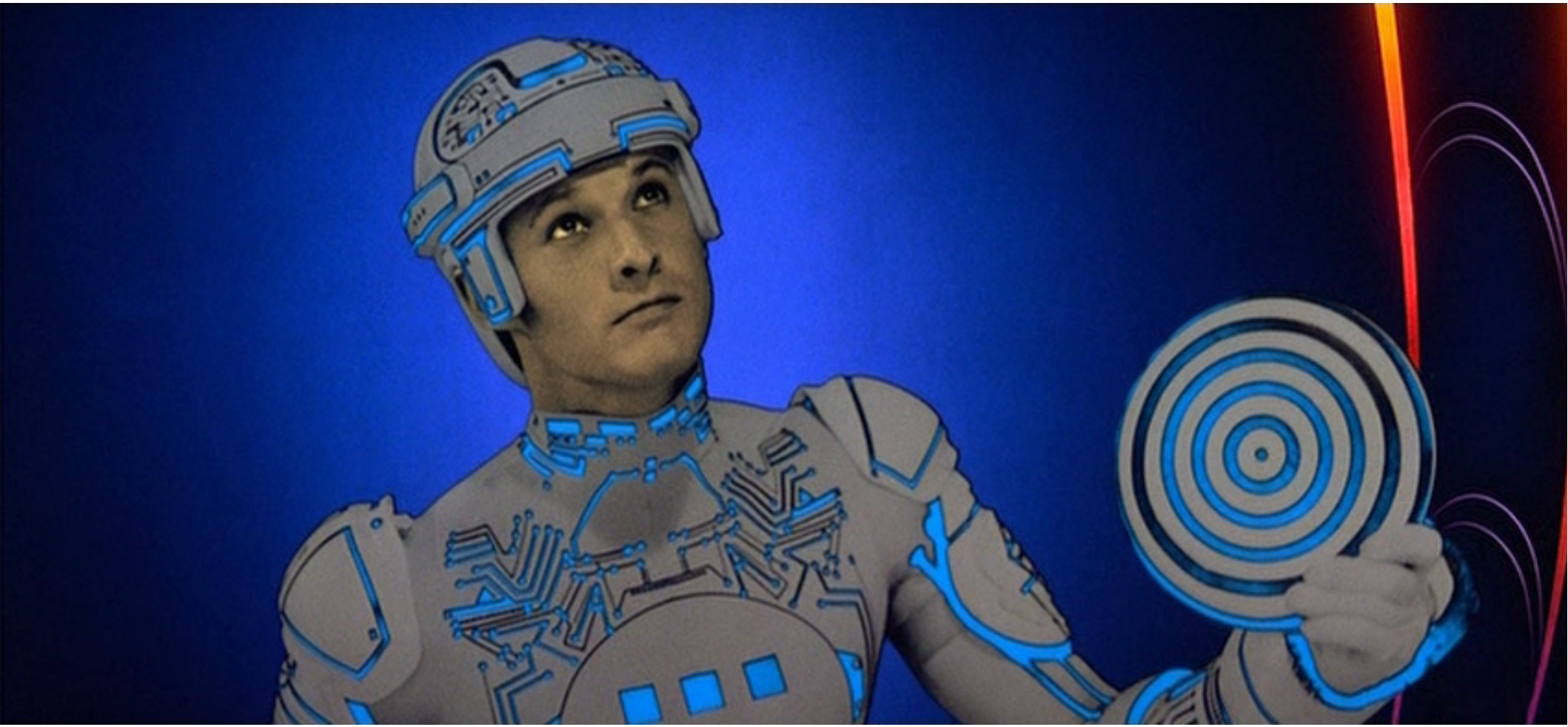
Implications of Functional Programming on the Human Rights

christo@cryptodrunks.net



Kevin Flynn: Who's that guy?

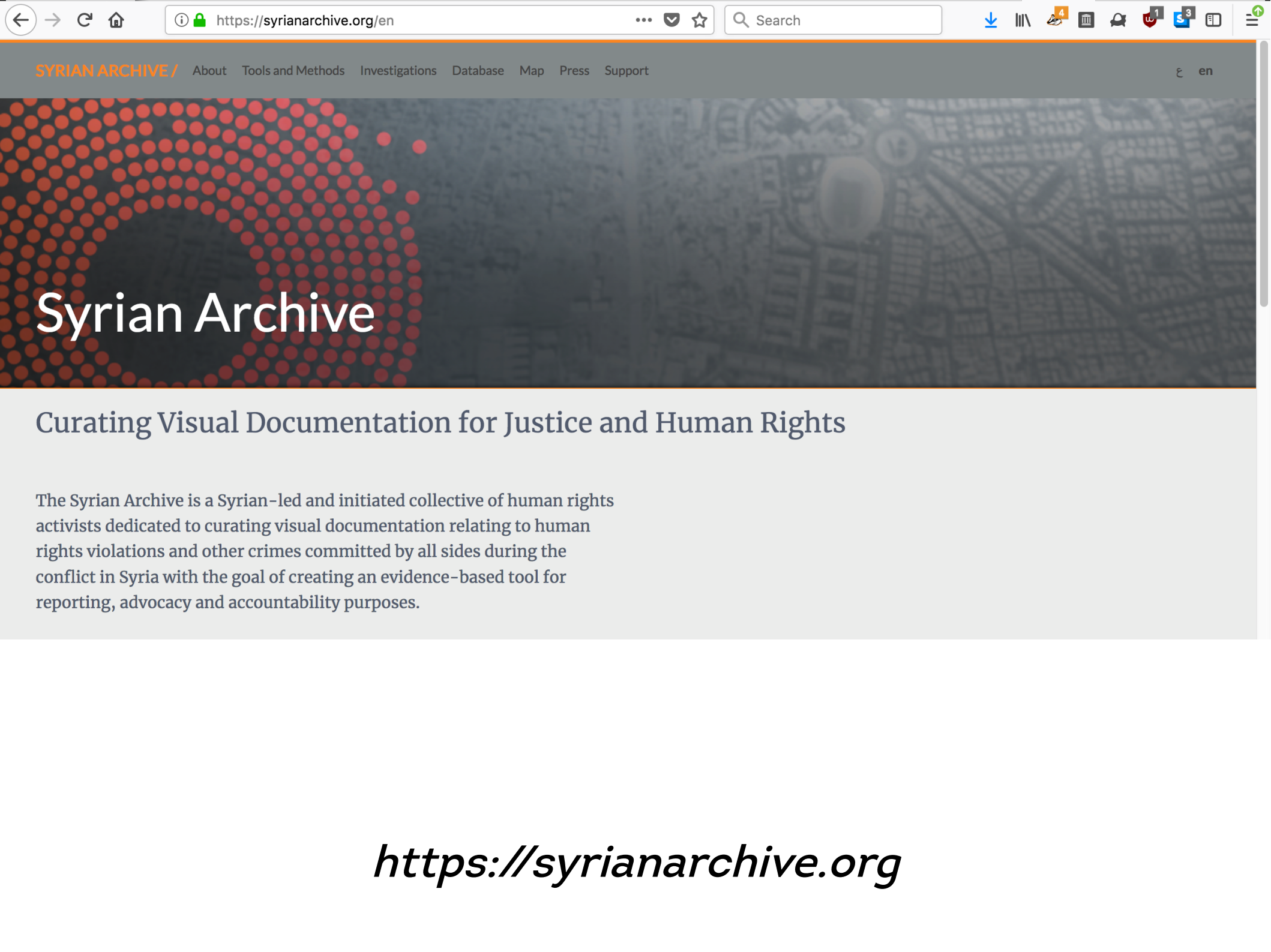
Warrior #1: That's Tron.

Transformation through collaboration, ugly and otherwise, is the human condition.

– *Anna Lowenhaupt Tsing*

Organizations which design systems ... are constrained to produce designs which are copies of the communication structures of these organizations.

– *Melvin Conway*



https://syrianarchive.org

https://syrianarchive.org/en/database?unit=0cc24333 Search

Warning: this video may contain graphic content

The video shows footage before and during the attack on the hospital, the transfer of patients and the damage at the targeted site

Download file ↓

Online Link
https://www.youtube.com/watch?v=1xoI1ZXbUc4

Meta
md5 b03cb96c7d8963e5a34efd471ef02643 - acquired 2018-02-06T12:08:24.721Z

Incident Occurred at:
2018-02-05

10:19:56

Location:
IDLIB : Kafranbel nahiyah

Precise Location:

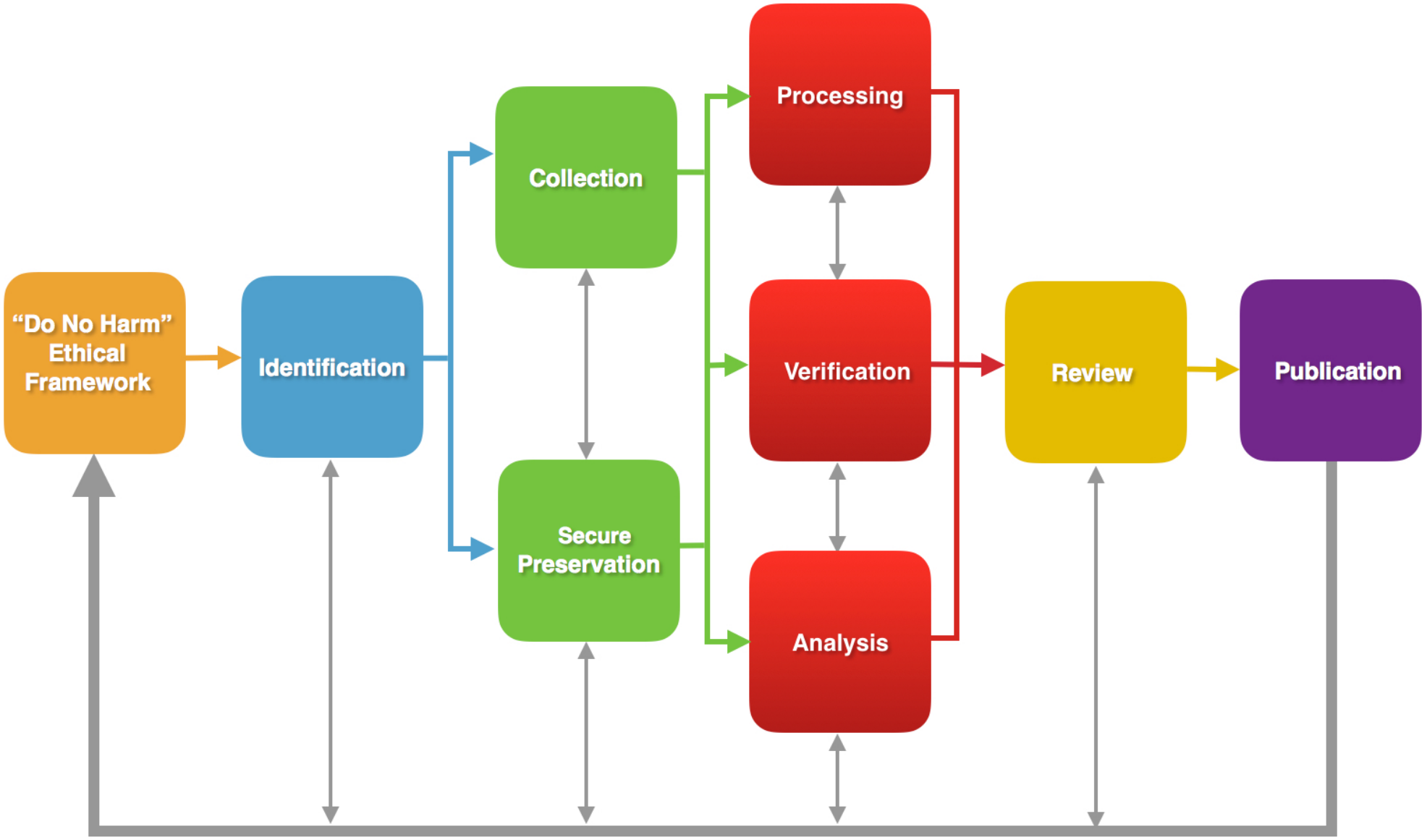
Acquired From:
Mohamed Aldaher

Weapons Used:

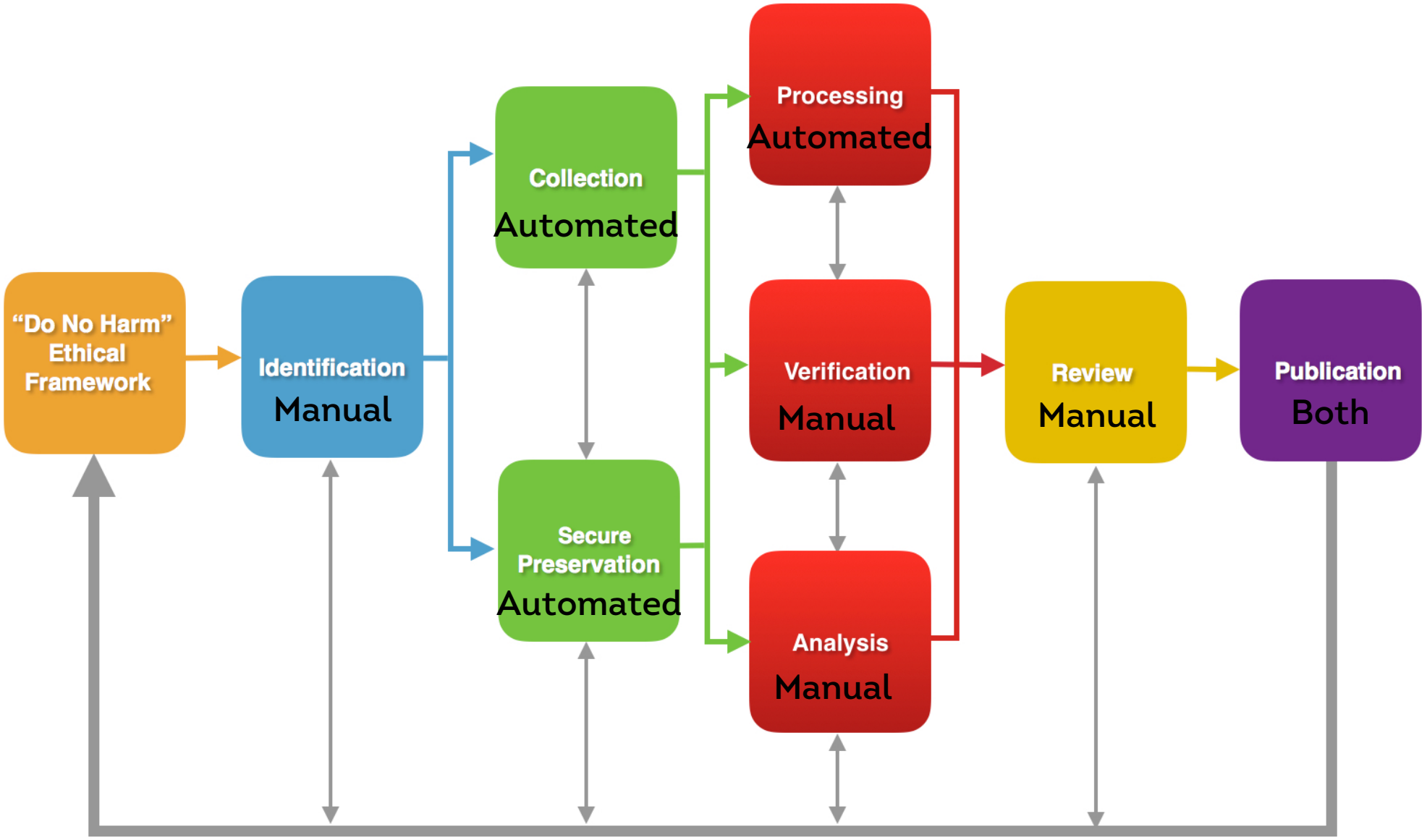
Collections:
Attacks against hospitals

Type of Violation:
Violations against specifically protected persons and objects

Syrian Archive Digital Evidence Workflow



Syrian Archive Digital Evidence Workflow



- Allow to rearrange it’s elements.
- Play nice in a bigger context.
- Embed in a workflow.
- Preserve peoples agency.

Theory is always a detour on the way to something more important.

$$(g \circ f)(x) = g(f(x))$$

AN INTRODUCTION

TO THE

THEORY OF LISTS

by

Richard S. Bird

Oxford University
Computing Laboratory
Programming Research Group-Library
8-11 Keble Road
Oxford OX1 3QD
Oxford (0865) 54141

Technical Monograph PRG-56

October 1986

Oxford University Computing Laboratory
Programming Research Group
8-11 Keble Road
Oxford OX1 3QD
England

SugarCube - Monoidal data sequences.

https://gitlab.com/sugarcube/sugarcube

f → twitter_feed

g → tika_location

h → exif_extract

k → csv_expand

Sequence → *k(h(g(f(x))))*

- Sequences are lists of functions.
- Data is a list of records.

```
2018-02-23T06:19:13.240Z - info: Starting run 4995368760c98d9981b120aa48a68c7e4dd27df9.
2018-02-23T06:19:13.248Z - info: Starting the sheets_queries plugin.
2018-02-23T06:19:13.250Z - info: Fetching 1 sheet
2018-02-23T06:19:15.217Z - info: Expanded 108kFL7R46ErCo45qABcTCU6rrhWsXVCJWYWyeNTEz7E/Sec Queries to 4 queries.
2018-02-23T06:19:15.218Z - info: Fetched 4 queries.
2018-02-23T06:19:15.222Z - info: Finished the sheets_queries plugin.
2018-02-23T06:19:15.223Z - info: Starting the sec_search plugin.
2018-02-23T06:19:15.225Z - info: Searching the SEC for 'Cobalt Refinery'
2018-02-23T06:19:22.768Z - info: Fetched 29 results.
2018-02-23T06:19:22.939Z - info: Finished the sec_search plugin.
2018-02-23T06:19:22.939Z - info: Starting the tika_location plugin.
2018-02-23T06:19:24.878Z - info: Finished the tika_location plugin.
2018-02-23T06:19:24.879Z - info: Starting the regex_match plugin.
2018-02-23T06:19:24.880Z - info: Matching: /((\w+\s*)?(\w+\s*)?Refinery(\s*\w+)?(\s*\w+)?)|((\w+\s*)?(\w+\s*)?Capacity(\s*\w+)?(\s*\w+)?)|((\w+\s*)?(\w+\s*)?T
ons(\s*\w+)?(\s*\w+)?)/gi
2018-02-23T06:19:25.358Z - info: Finished the regex_match plugin.
2018-02-23T06:19:25.359Z - info: Starting the sheets_export plugin.
2018-02-23T06:19:26.868Z - info: Units exported to https://docs.google.com/spreadsheets/d/108kFL7R46ErCo45qABcTCU6rrhWsXVCJWYWyeNTEz7E/edit#gid=0
2018-02-23T06:19:28.399Z - info: Merging 13 new units and 536 existing rows.
2018-02-23T06:19:32.423Z - info: Finished the sheets_export plugin.
2018-02-23T06:19:32.425Z - info: receiving stats for: none
2018-02-23T06:19:32.427Z - info: Finished the LSD.
```

*$ sugarcube -q queries.json -c config.json *

-p twitter_feed,tika_location,exif_extract,csv_export

- Not Turing complete, nor off the shelve, somewhere in between.
- Compose functions to form chains of executions.
- Lists as the fundamental data structure.
- Rearrange compositions depending on needs and insights.
- Reproduceable processes and workflows.

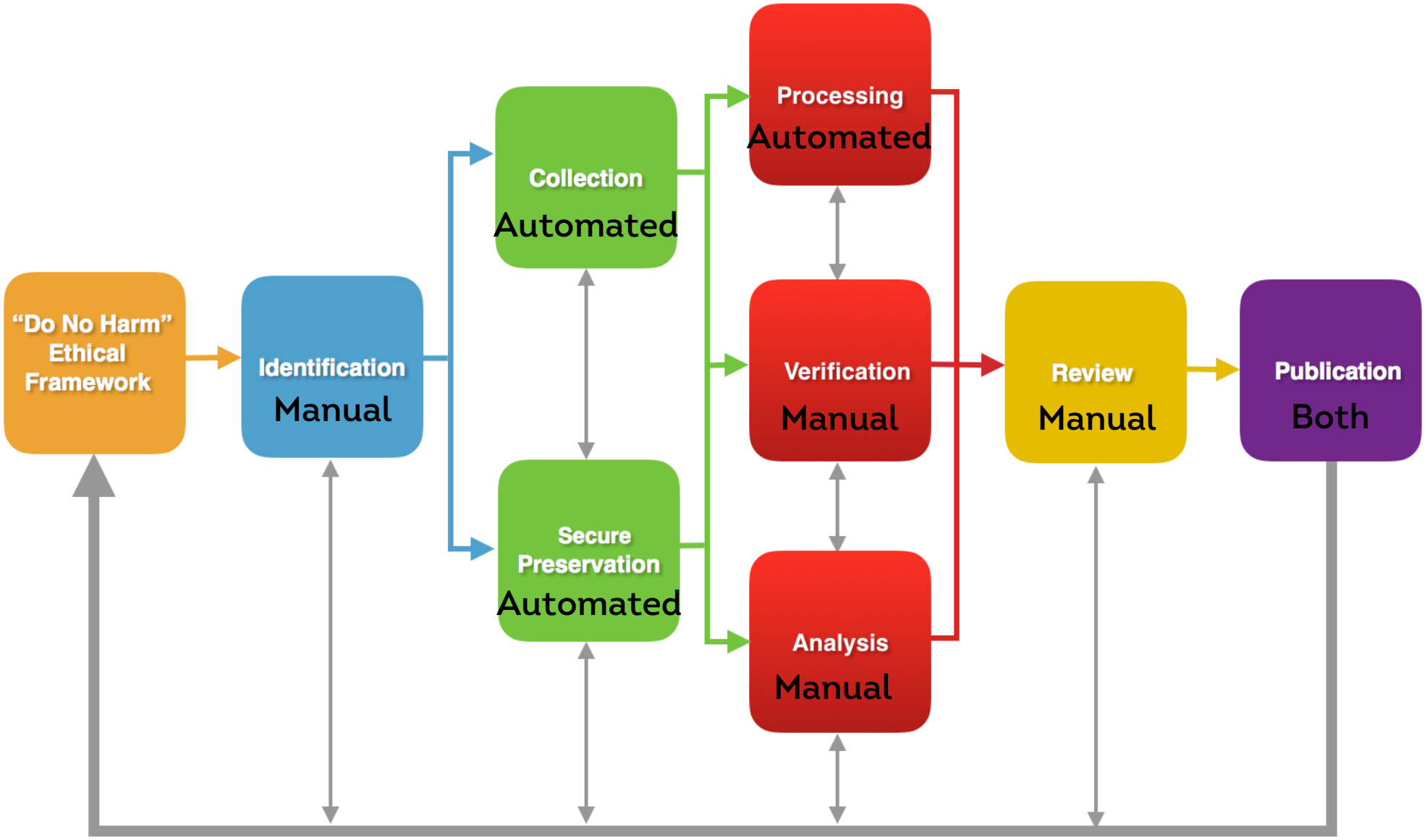
Traps

- Scalability is the ability to expand a project without having to change its framing assumptions.
- Scalability requires that project elements are oblivious to the indeterminacies of encounters.
- Scalability prevents meaningful diversity, that is, diversity that might change things.

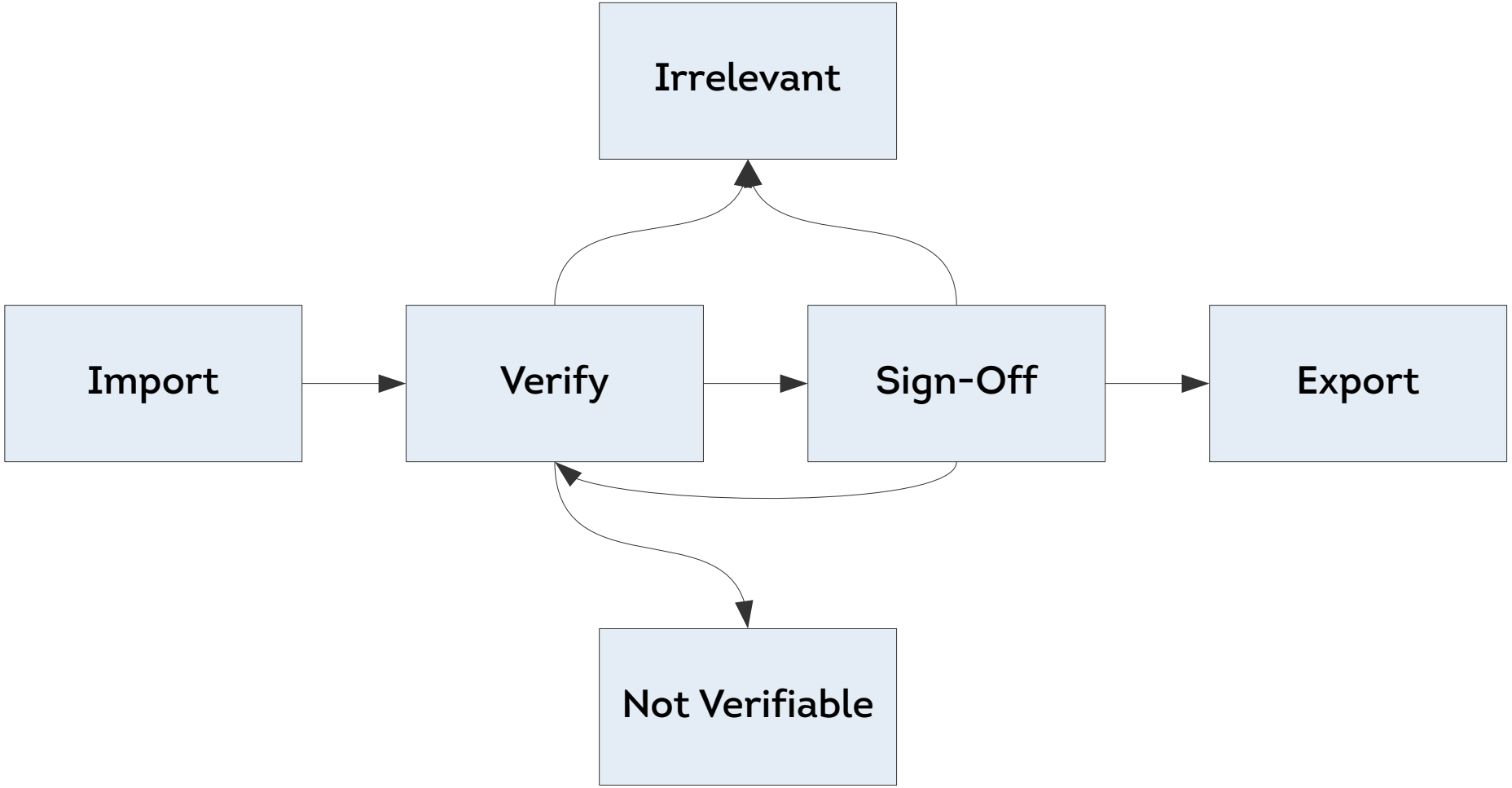
Traps

Techno-fixes

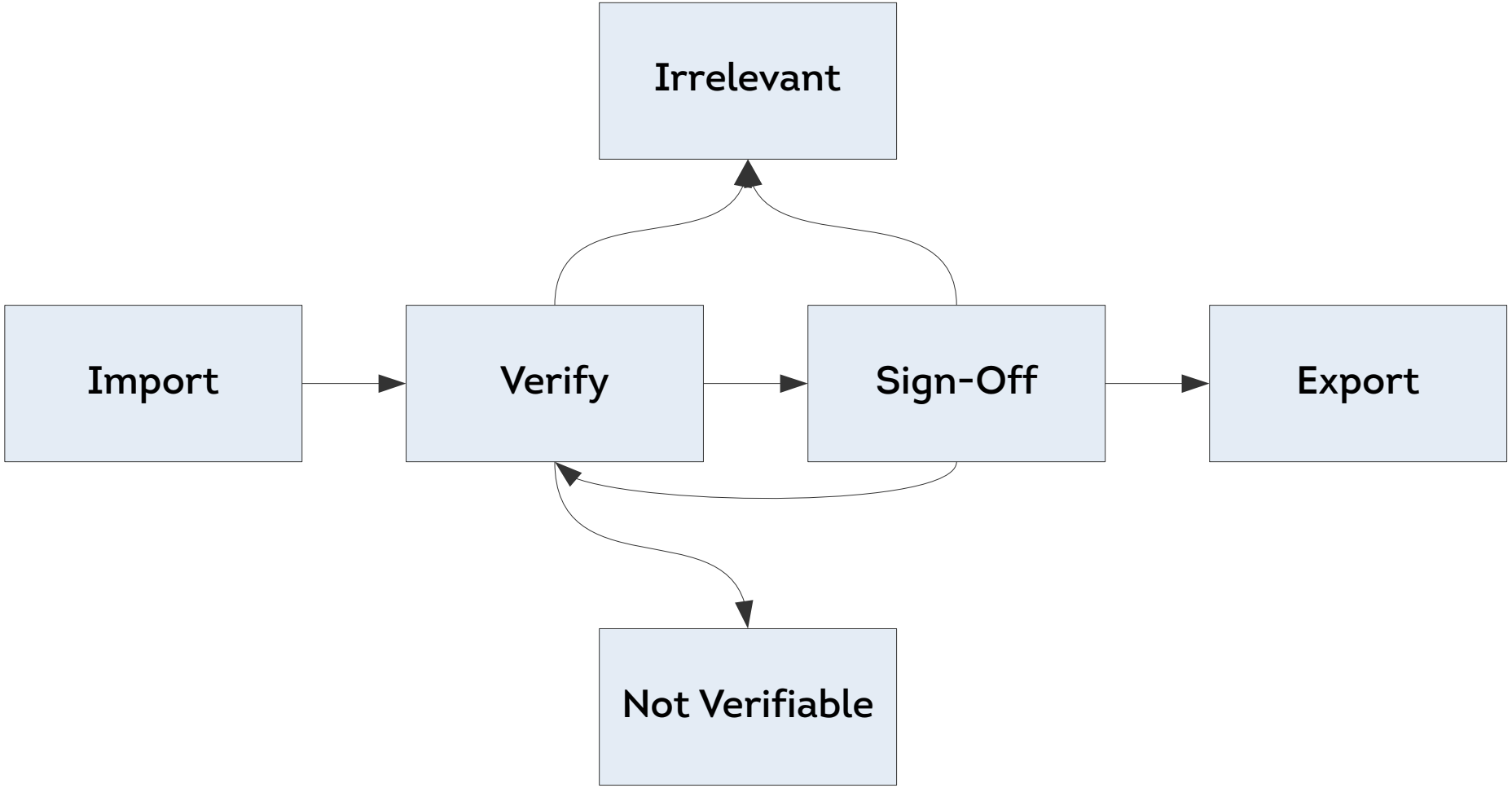
Syrian Archive Digital Evidence Workflow



Steps of Verification



Steps of Verification



State transitions form a data sequence.

Conclusion

- Lift secondary effects to become first class.
- Abstractions in your code are affecting users as well.
- Composition and decomposition give a vocabulary for the ubiquitous language of your domain.