

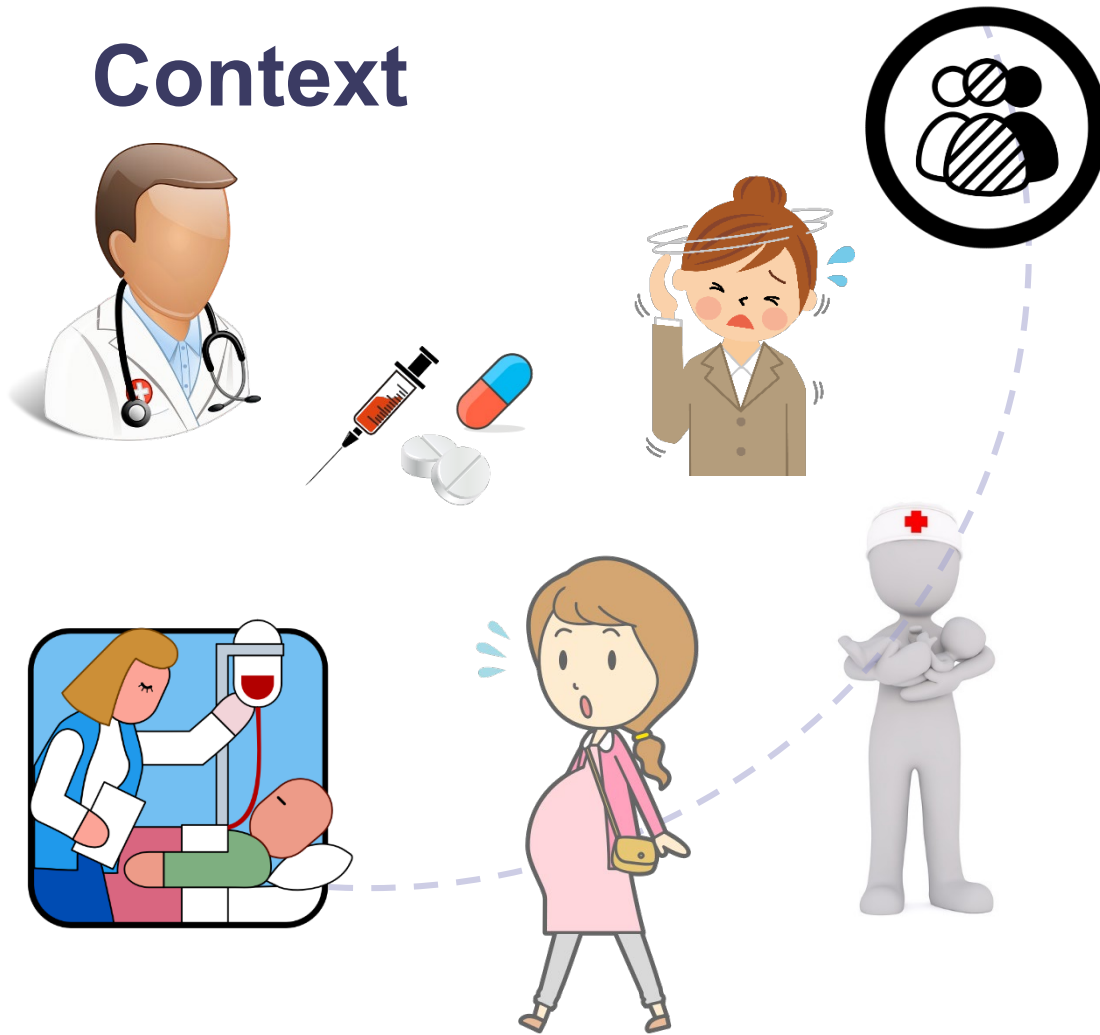


کاربرد فرایند کاوی در بررسی استفاده از سیستم تداخل دارویی در سیستم درمانی

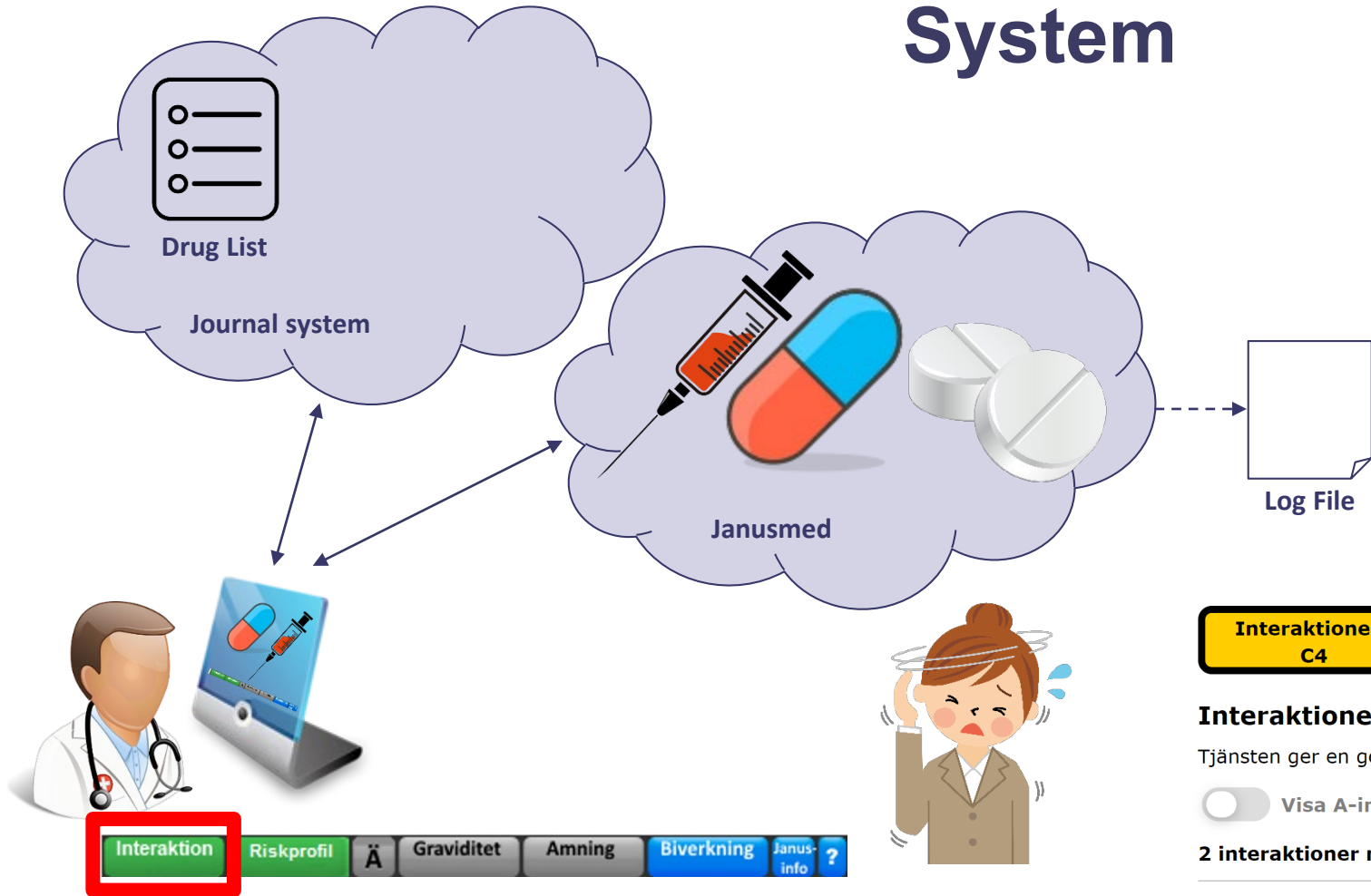
امین جلالی

Ph.D., Senior Lecturer  
Stockholm University

# Context



# Drug-Drug-Interactions in the Swedish Healthcare System



Interaktioner C4 ?
Riskprofil Logga in 
Fosterpåverkan 2
Amning 3 ?

## Interaktioner

Tjänsten ger en generell information utifrån substansens egenskaper och administrationsväg c

Visa A-interaktioner

### 2 interaktioner mellan valda läkemedel

<b>+ Aspirin</b>	142	C4
citalopram Enteralt och Parenteralt	182	C4
disulfiram Enteralt och Parenteralt	18	B1
<b>+ Medikinet</b>	31	B1

[+ Expandera produkter](#)

<b>A</b>	Interaktionen saknar klinisk betydelse
<b>B</b>	Interaktionens kliniska betydelse är okänd och/eller varierar
<b>C</b>	Kliniskt betydelsefull interaktion som kan hanteras med t.ex dosjustering
<b>D</b>	Kliniskt betydelsefull interaktion som bör undvikas

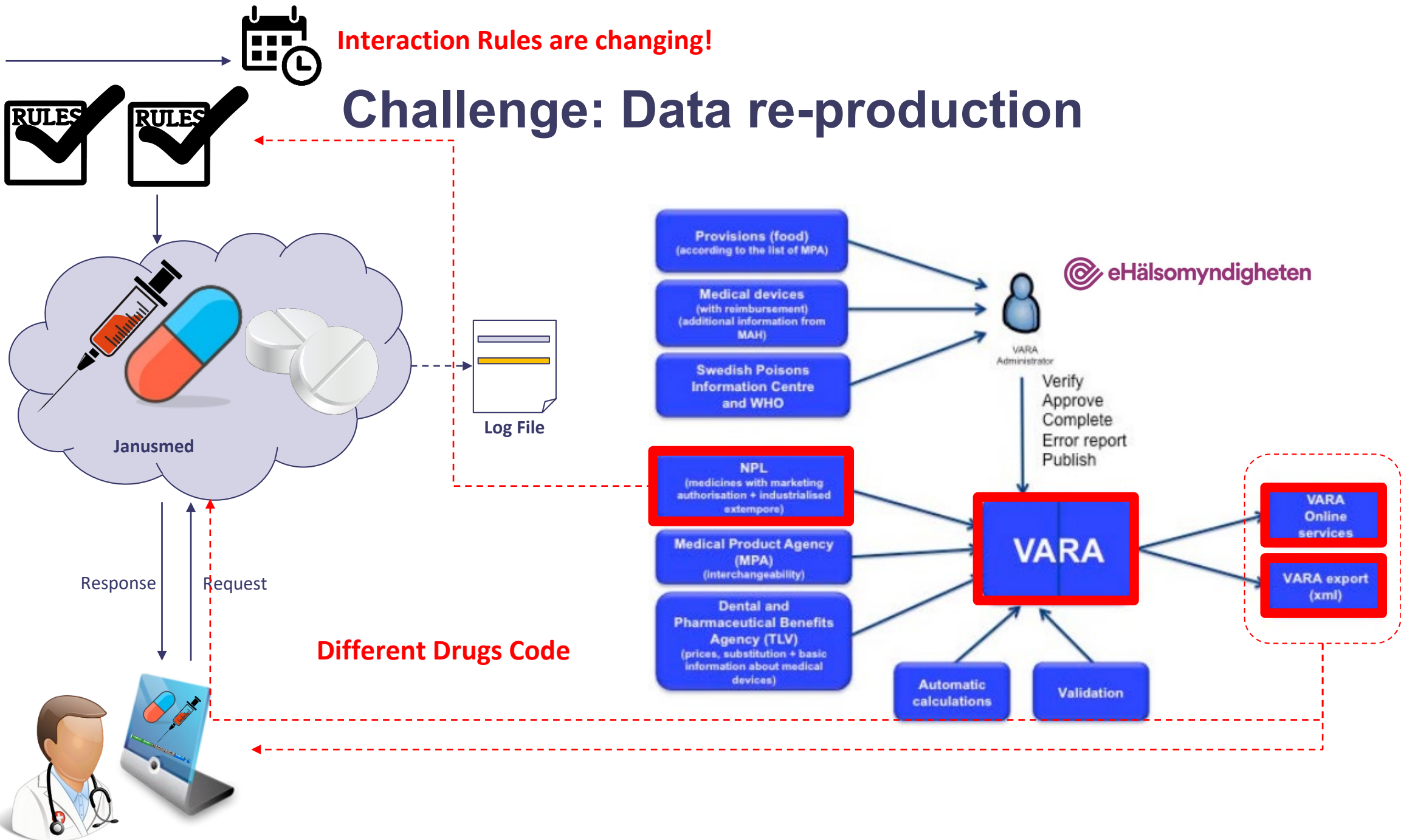


# Data Availability and Integration



Interaction Rules are changing!

# Challenge: Data re-production

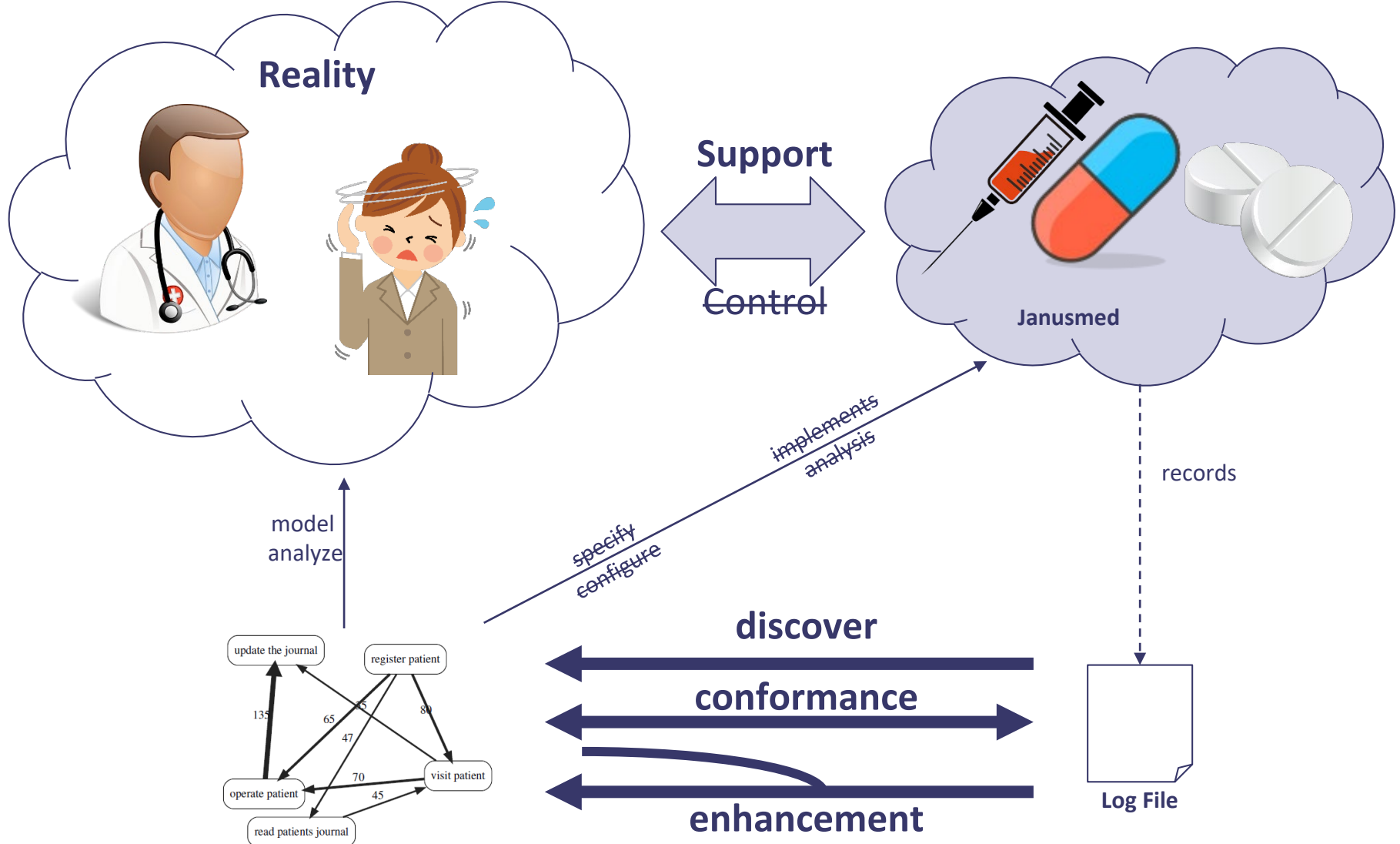




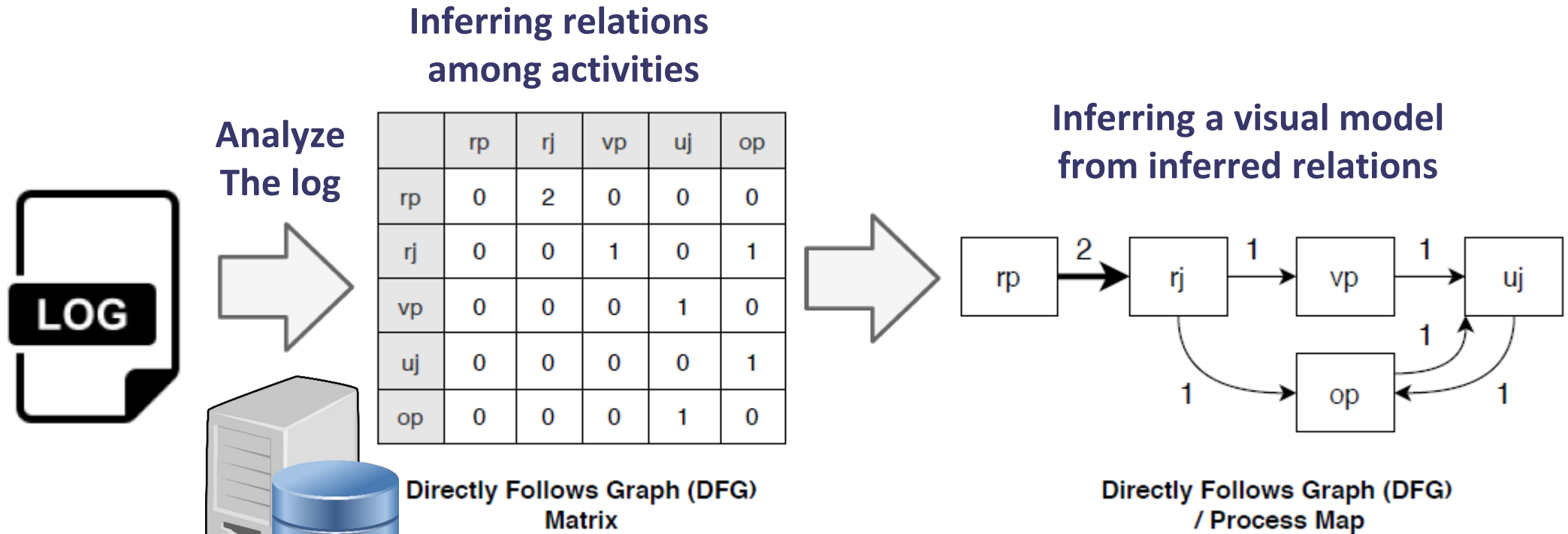
# Process Mining



# Process Mining use cases



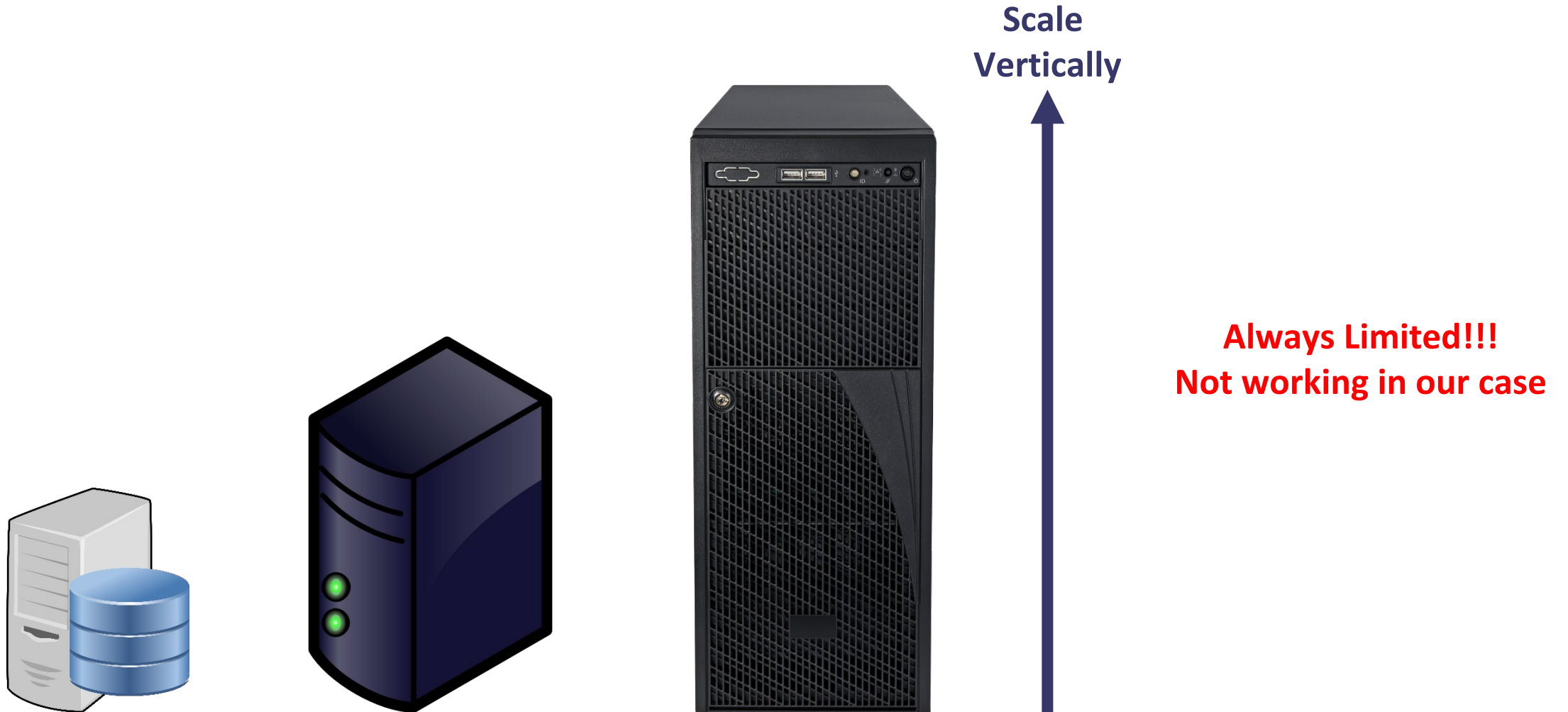
# Looking into the Process Discovery



What if the log is too BIG?

- **Read partially!**
  - Very few algorithm!
  - Not suitable for analysis (changing analysis dimension)
- **Scale hardware**

# What about analysing BIG Data? Vertical scaling?



# What about analysing BIG Data? Horizontal scaling?

- **Available options**

- **neo4pm**

- Jalali A. (2021)

- Graph-Based Process Mining.

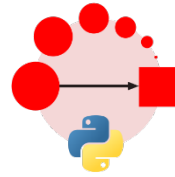
- In: Leemans S., Leopold H. (eds) Process Mining Workshops. ICPM 2020.

- Lecture Notes in Business Information Processing, vol 406. Springer, Cham.

- [https://doi.org/10.1007/978-3-030-72693-5\\_21](https://doi.org/10.1007/978-3-030-72693-5_21)

- **Pm4pyspark**

- not available when we did our project



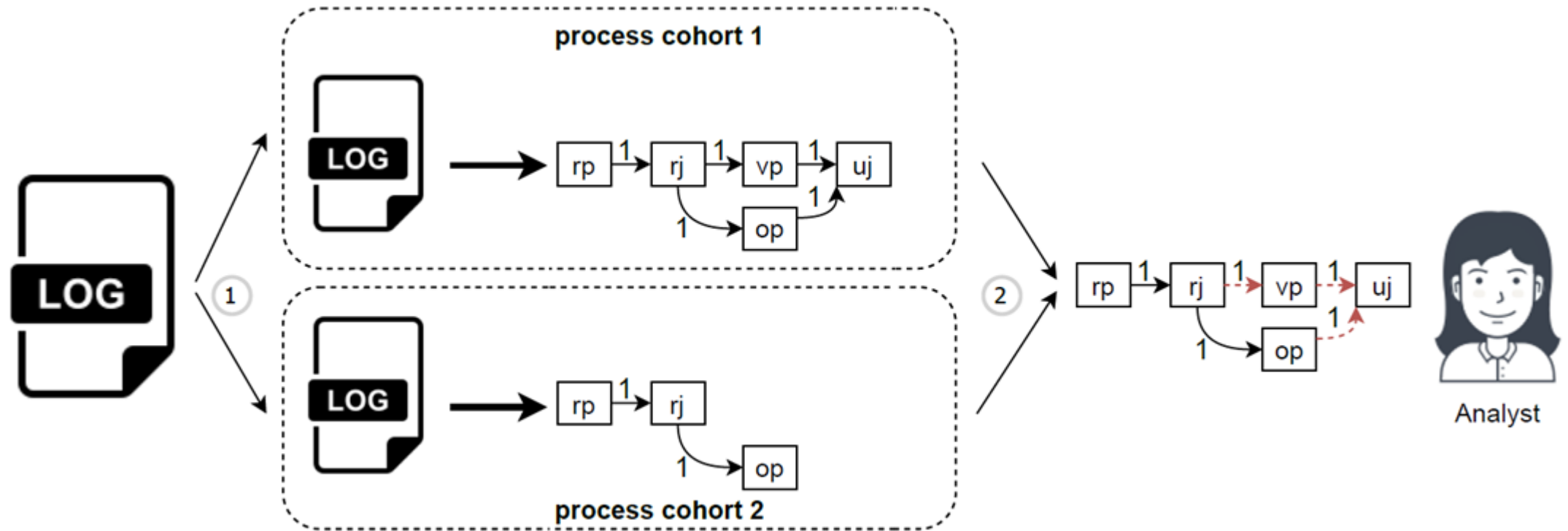
<https://github.com/neo4pm/>



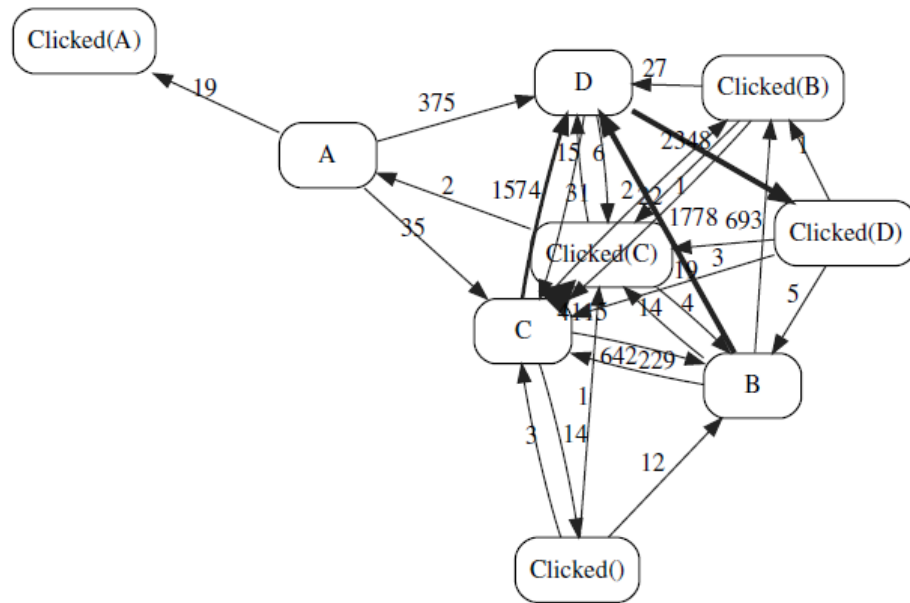
Scale  
Horizontally



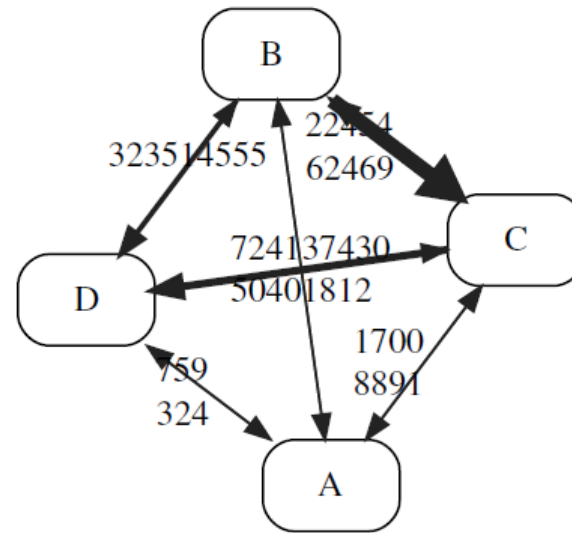
# Process discovery: Variant analysis



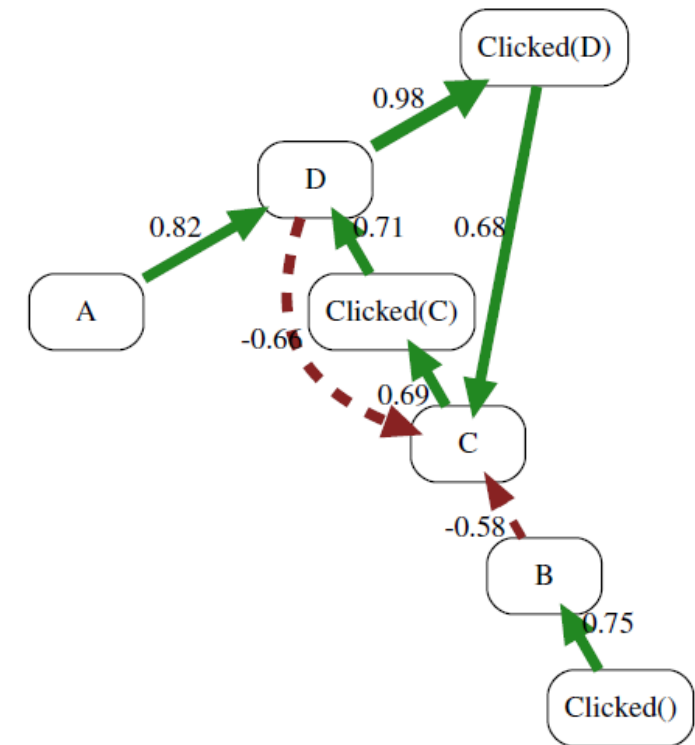
# Cohort analysis for a sample sized data



(a) Clicked Sessions



(b) Not Clicked Sessions



Process Maps for the two process variations

# The End

