

# Intro to REA

Selected slides from Bill McCarthy, the father of REA  
- and a few slides from other people.

*R*

*E*

*A*



*stockflow*



*participation*



*duality*

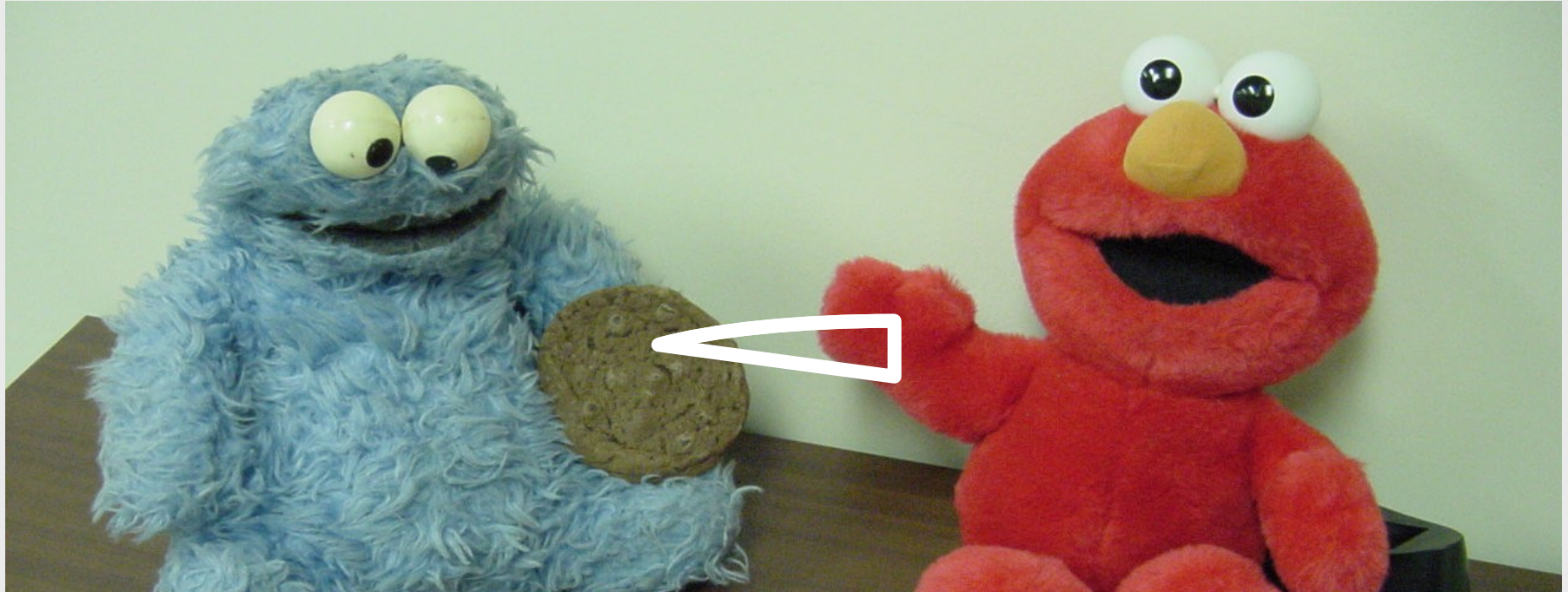
*an accounting story*

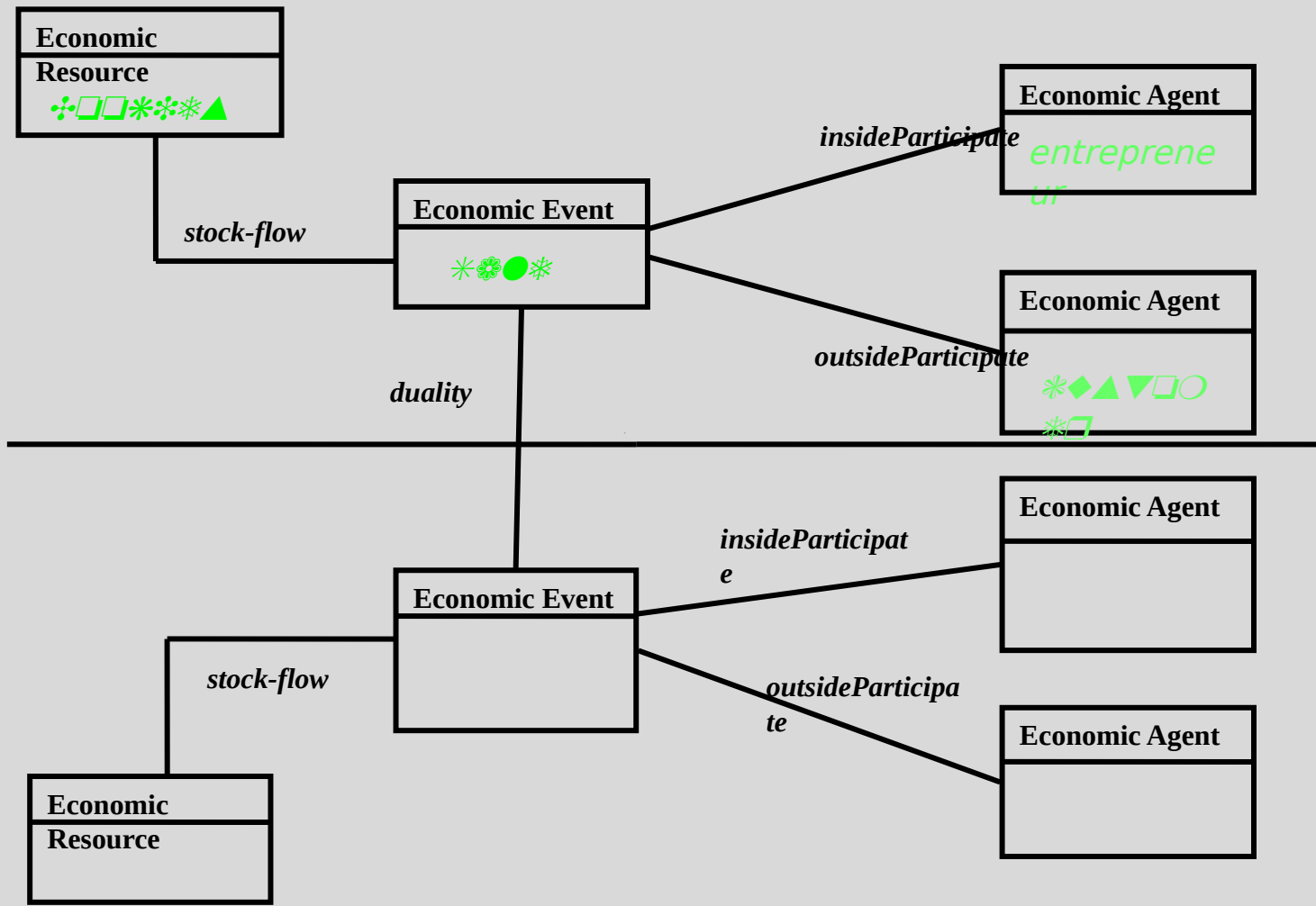
**Once upon a time at  
the cookie store .....**

**Cookie-Monster (the monster)** and **Elmo (the baker)** meet in the (real or virtual) marketplace, thus setting the stage for an Economic Exchange

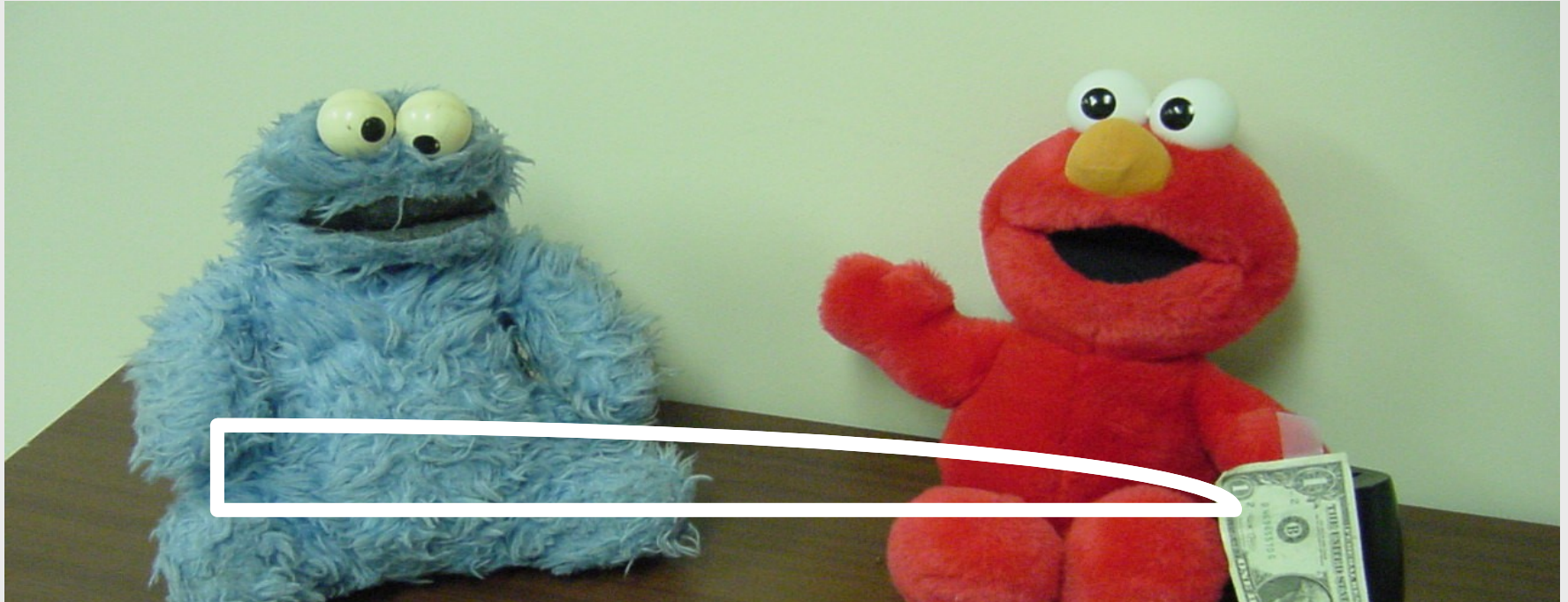


# **Cookie-Monster** and **Elmo** engage in a **SALE** (transfer of Cookie Inventory)

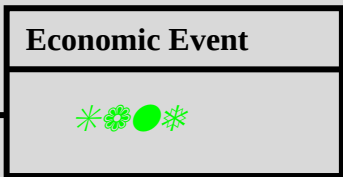
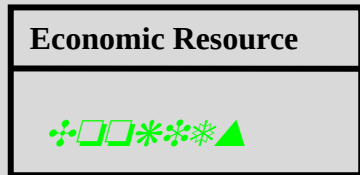




# Cookie-Monster and Elmo engage in a PAYMENT (transfer of Cash)







duality

*insideParticipate*



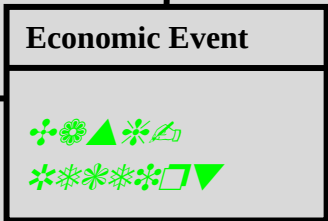
*outsideParticipate*



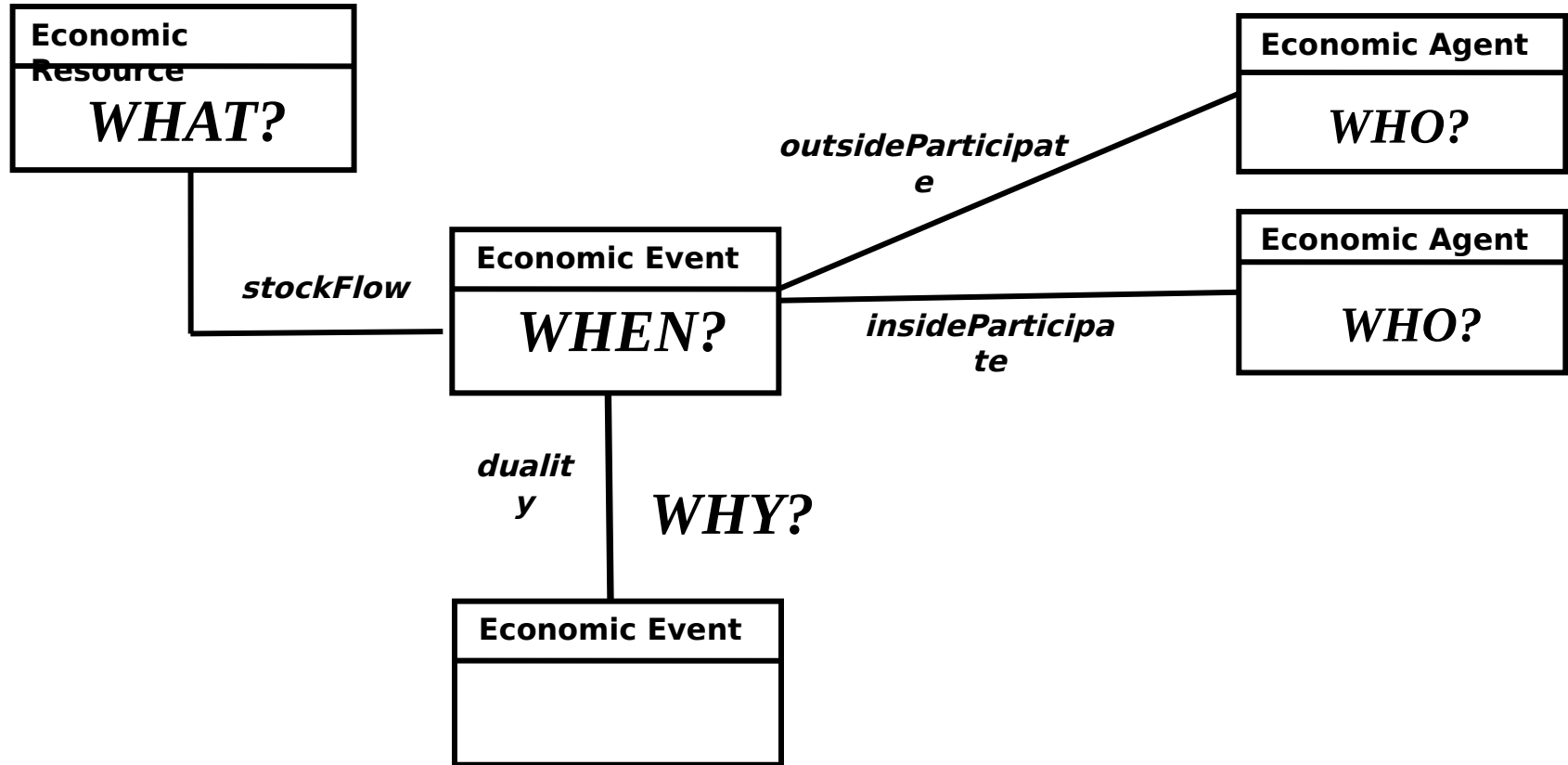
*insideParticipate*



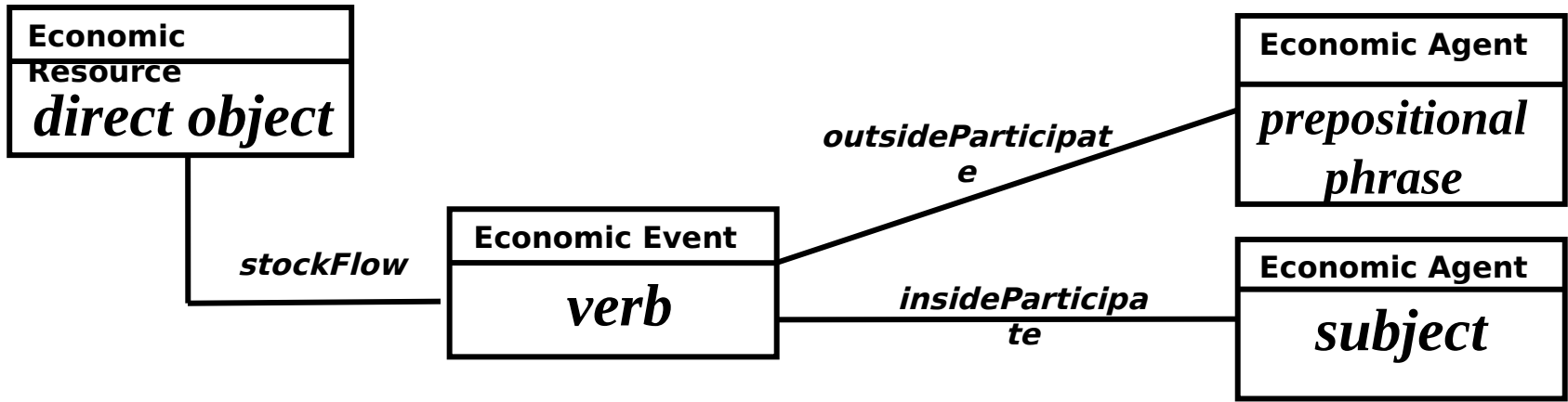
*outsideParticipate*



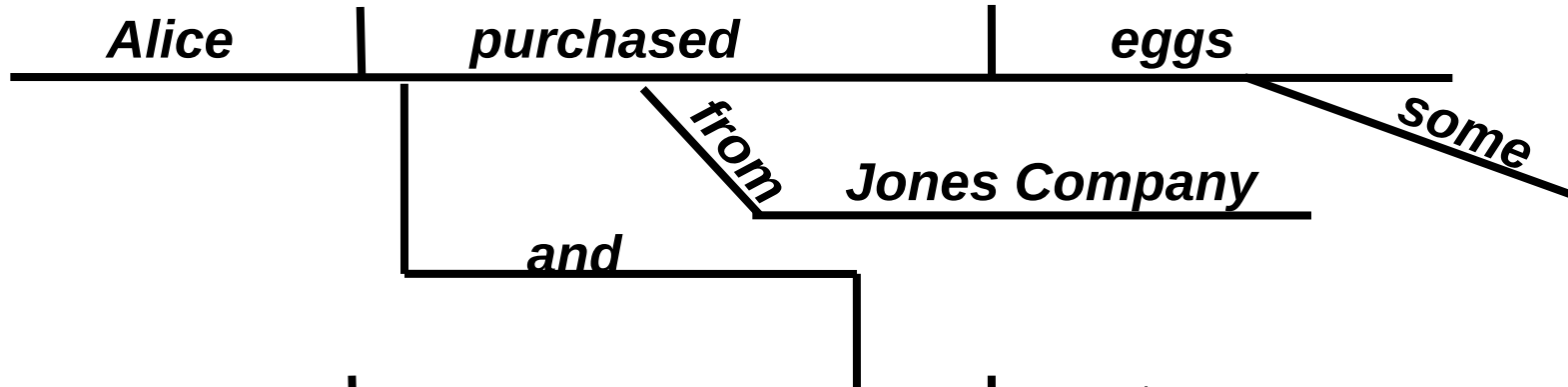




**The What, When, Who, and Why Translation of a Business Process**



### Normal Sentence Translation of the REA Metamodel



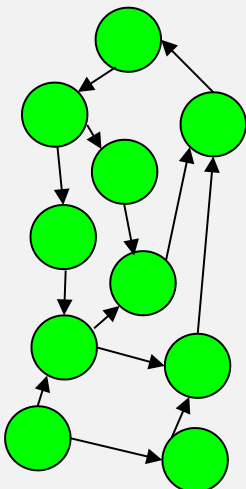
**Legacy Accounting Systems**  
( $A = L + OE$ )

source document

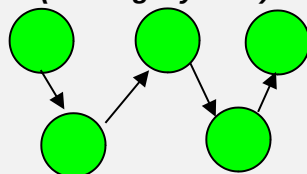
transactions & master files

Financial Statements

**Enterprise Value Chain (legacy ERP)**



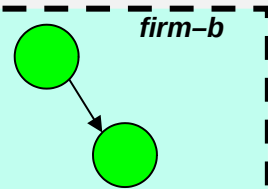
**Enterprise Value Chain (non-legacy ERP)**



Financial Reporting View

Other Views of Enterprise Event-chains

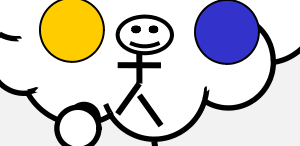
**Value Network (Independent view)**



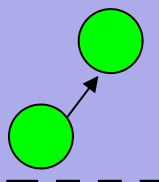
firm-a



distributed business transaction repository



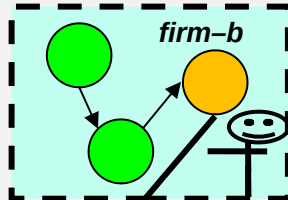
firm-c



Enterprise Value Chain (legacy ERP)

Enterprise Value Chain (legacy ERP)

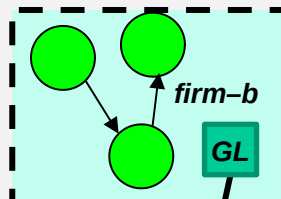
**Value Network (Trading Partner view)**



firm-a



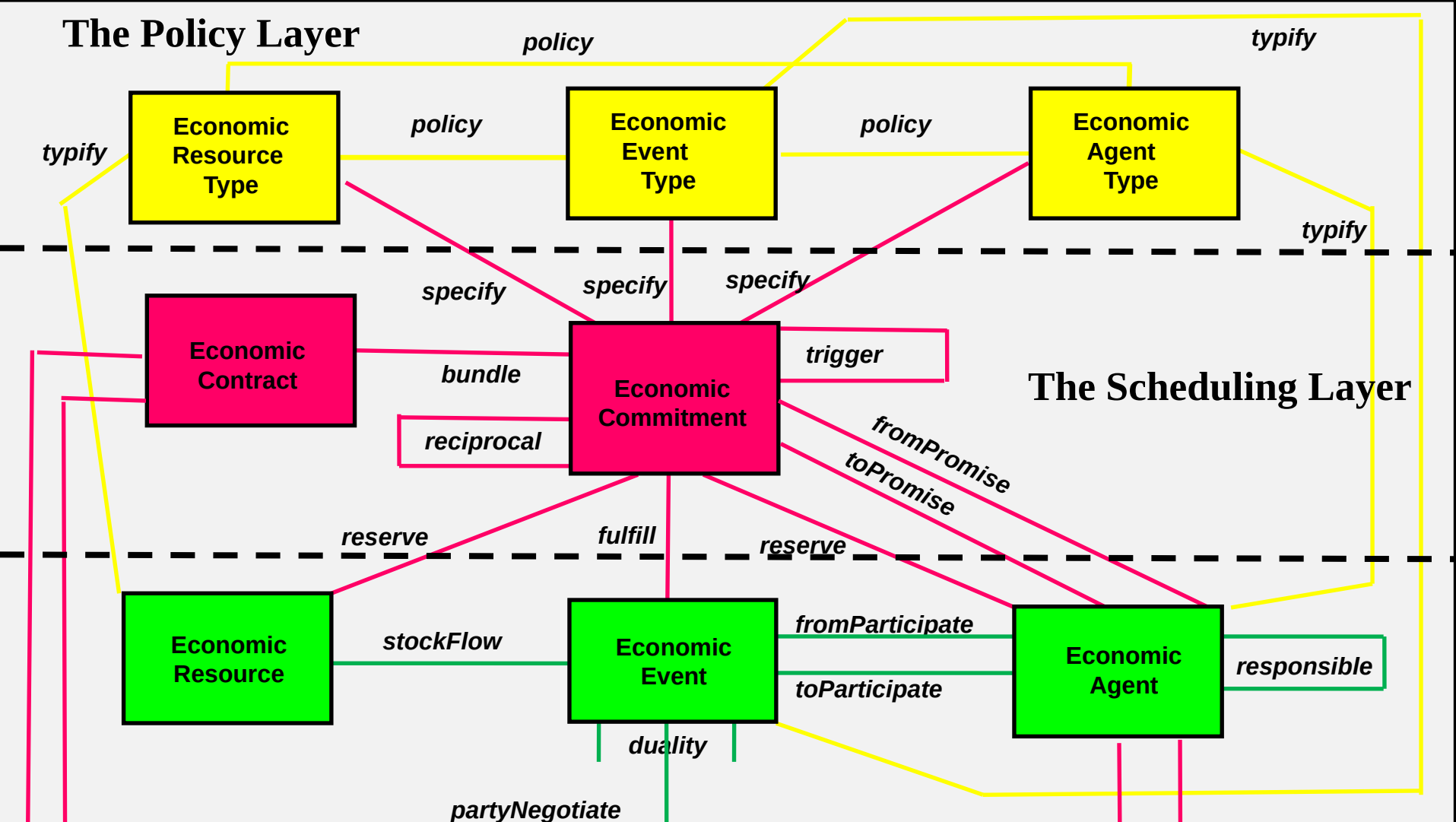
**Value Network (legacy hybrid)**



distributed



# The Policy Layer





# REAContracts

## Adding semantics to business contracts

Jesper Kiehn (Simon Peyton-Jones)

# The big picture

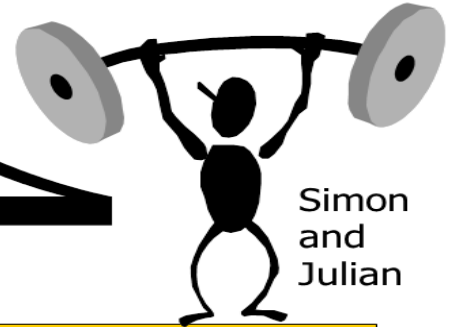
Swaps, caps, options,  
european, bermudan,  
straddle, floors, swaptions,  
swallows, spreads, futures

Jean Marc



Financial engineering

Simon  
and  
Julian



Programming  
language design and  
implementation

2



# Summary

Routine for us, radical stuff  
for financial engineers

- A small set of built-in combinators: named and tamed
- A user-extensible library defines the zoo of contracts
- Compositional denotational semantics, leads directly to modular valuation algorithms
- Risk Magazine Software Product of the Year Prize
- Jean-Marc has started a company, LexiFi, to commercialise the ideas



**Figure 4 – Accountability Layer for an Open Value Network (Source: McCarthy et al. 2018)**

