

# Analytic Metaphysics

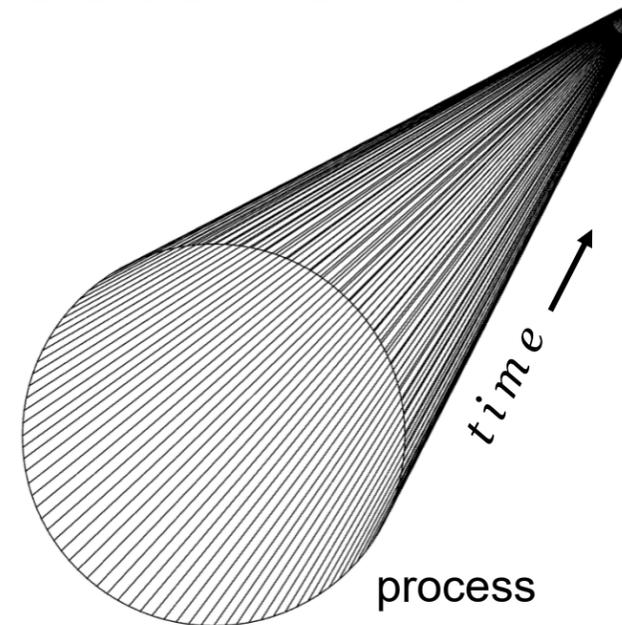
Barry Smith

Lecture 2

February 9, 2016

# Towards an Ontology of Deontic Entities

# Continuants vs occurrents



In preparing an inventory of reality, we keep track of these two different kinds of entities in two different ways

Two orthogonal, complementary perspectives (continuants vs. occurrents)

stocks and flows

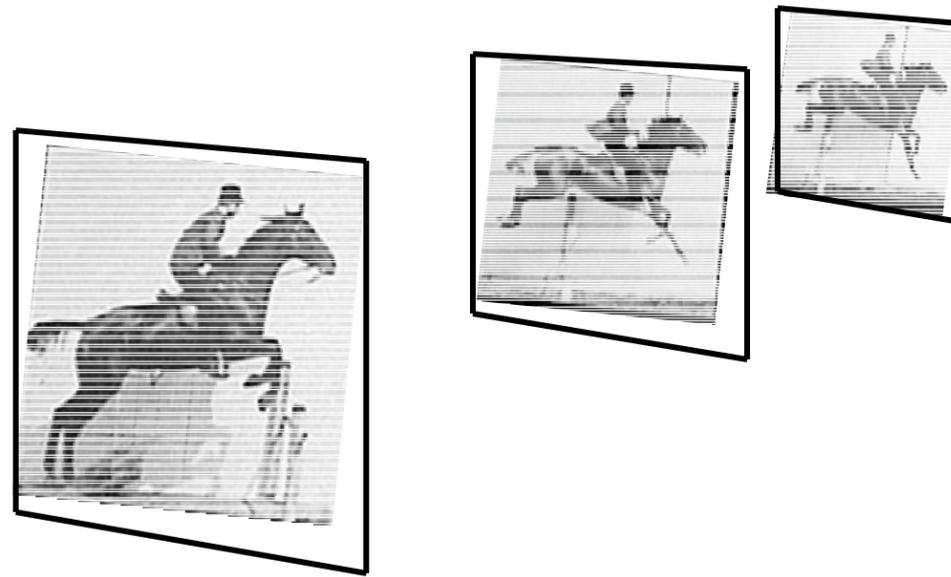
commodities and services

products and processes

anatomy and physiology

musical score and performance

continuants continue to exist



**Note that, while, the *views* are instantaneous, the *objects viewed* endure**

## **Continuant entities**

- have continuous existence in time
- preserve their identity through change
- exist *in toto* if they exist at all

## **Occurrent entities**

- have temporal parts
- unfold themselves phase by phase
- exist only in their phases/stages

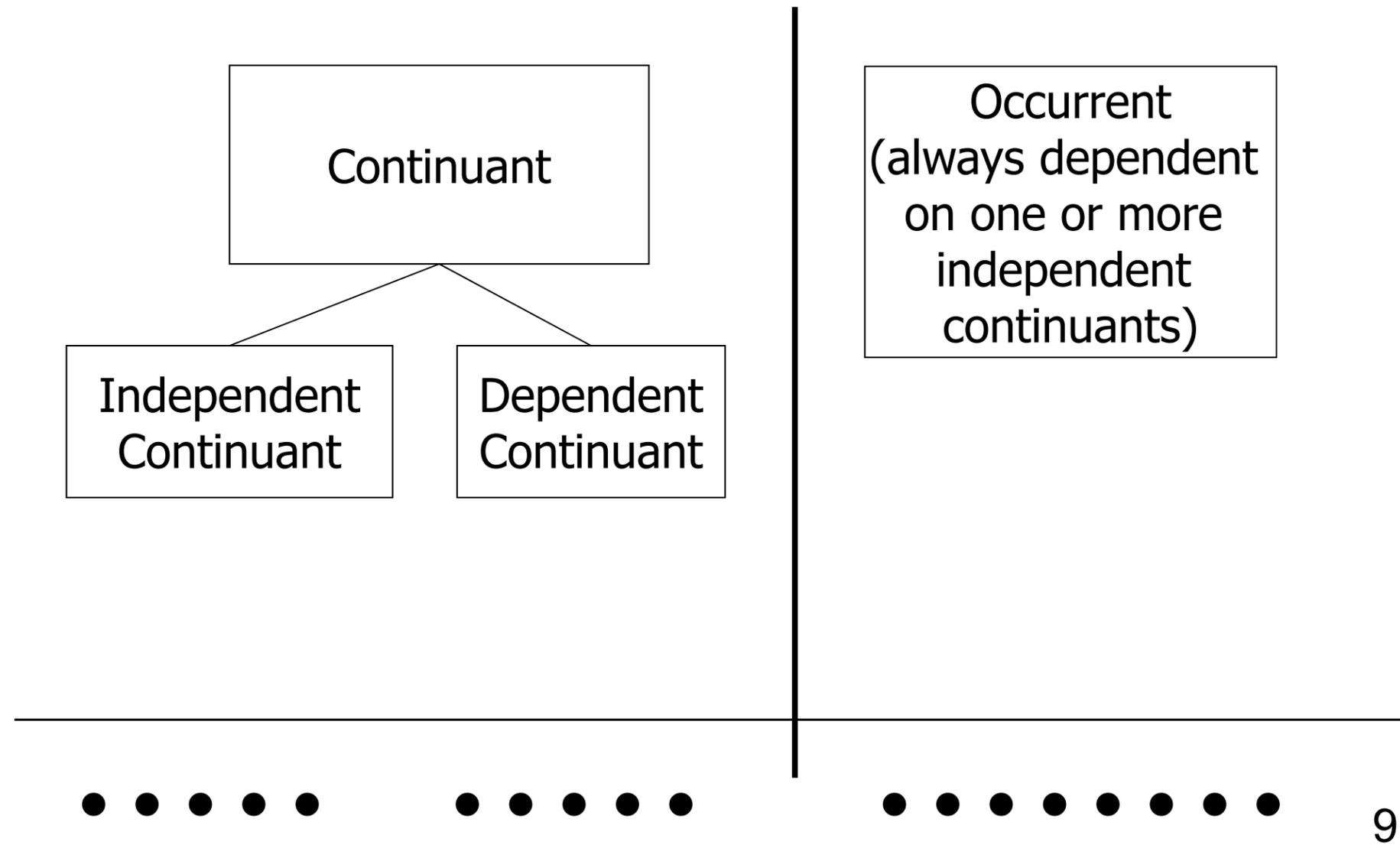
***You* are a substance**  
***Your life* is a process**

***You* are 3-dimensional**  
***Your life* is 4-dimensional**

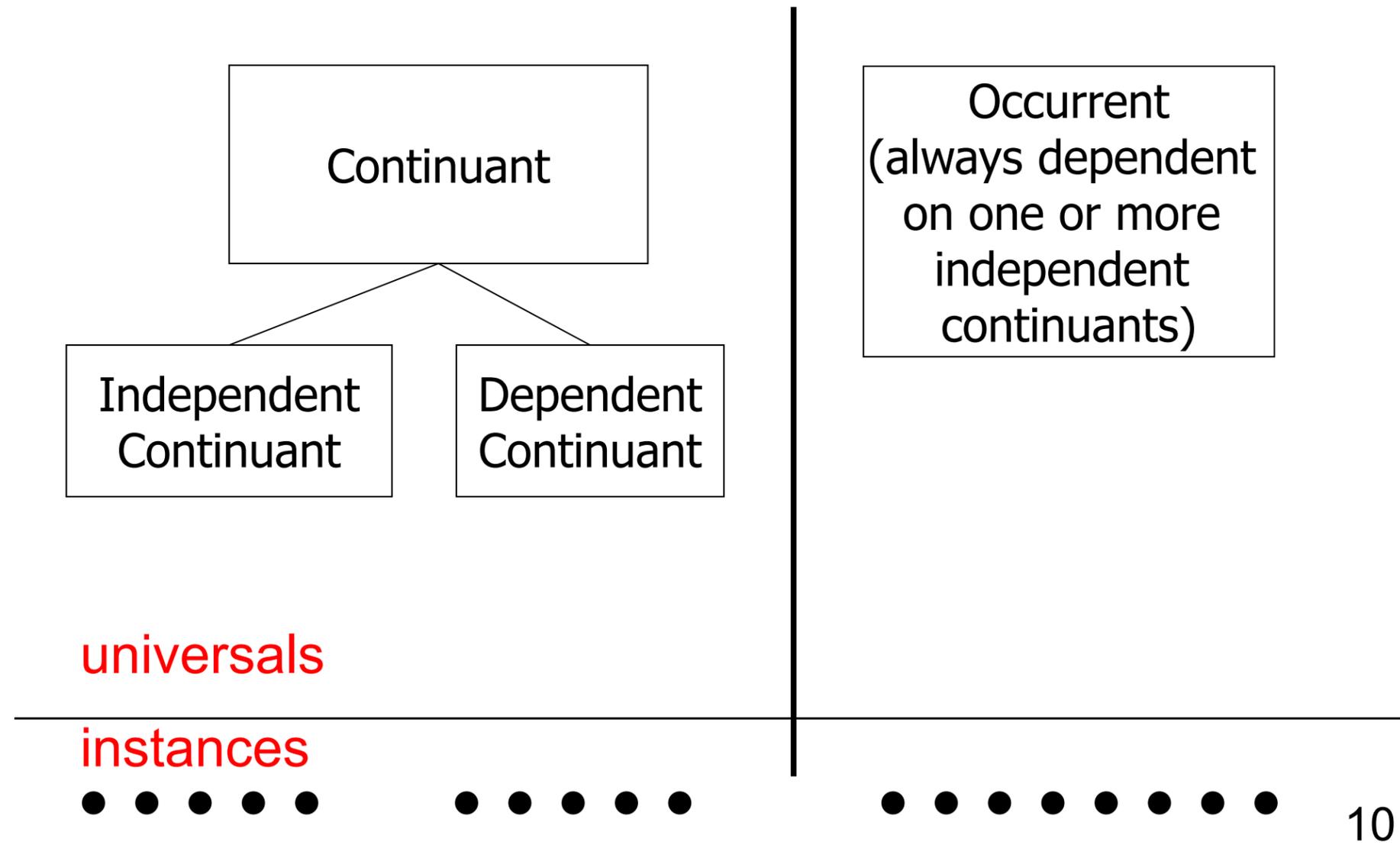
## The (Aristotelian) Ontological Sextet

	Substances	Quality entities	Processes
Universals	Substance- universals	Quality- universals	Process- universals
Particulars	Individual Substances	Quality- instances (Tropes...)	Process- instances

# BFO: the very top



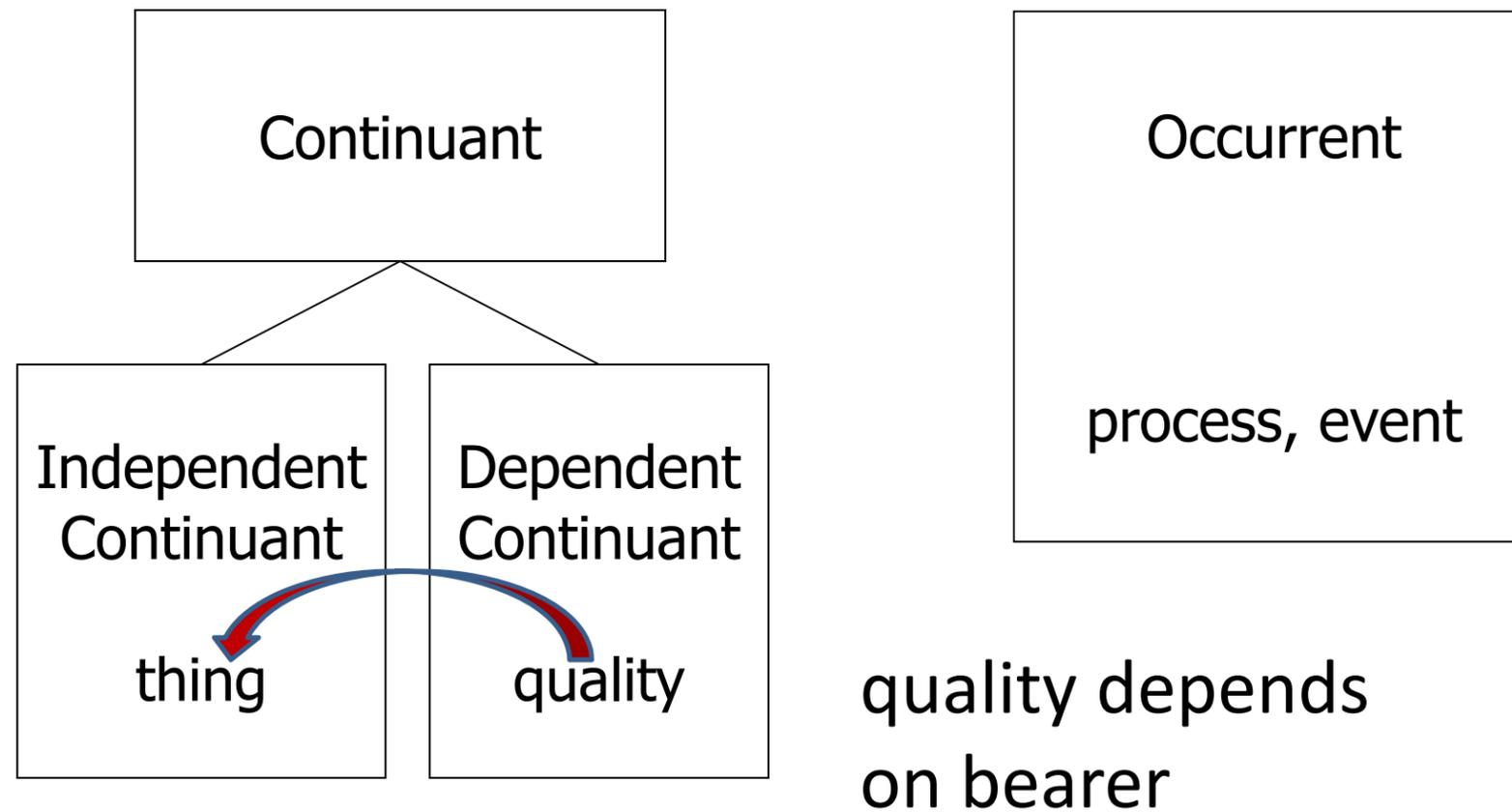
# BFO: the very top



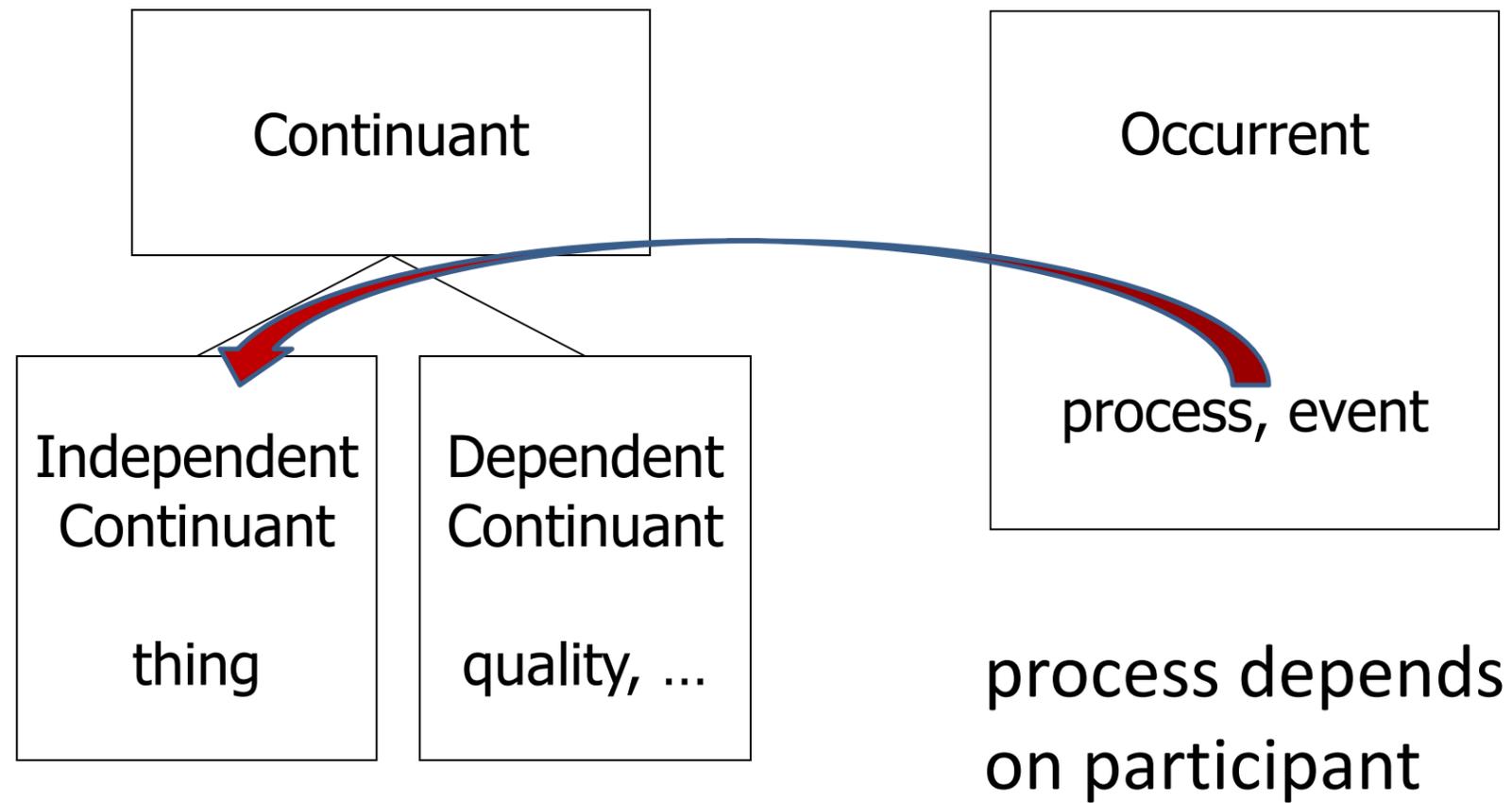
## The Ontological Sextet

	Substances	Qualities, Roles, Functions, ....	Processes
Universals	Object- universals	Dependent Continuant- universals,	Process- universals
Particulars	Object- instances	Dependent Continuant- instances	Process- instances

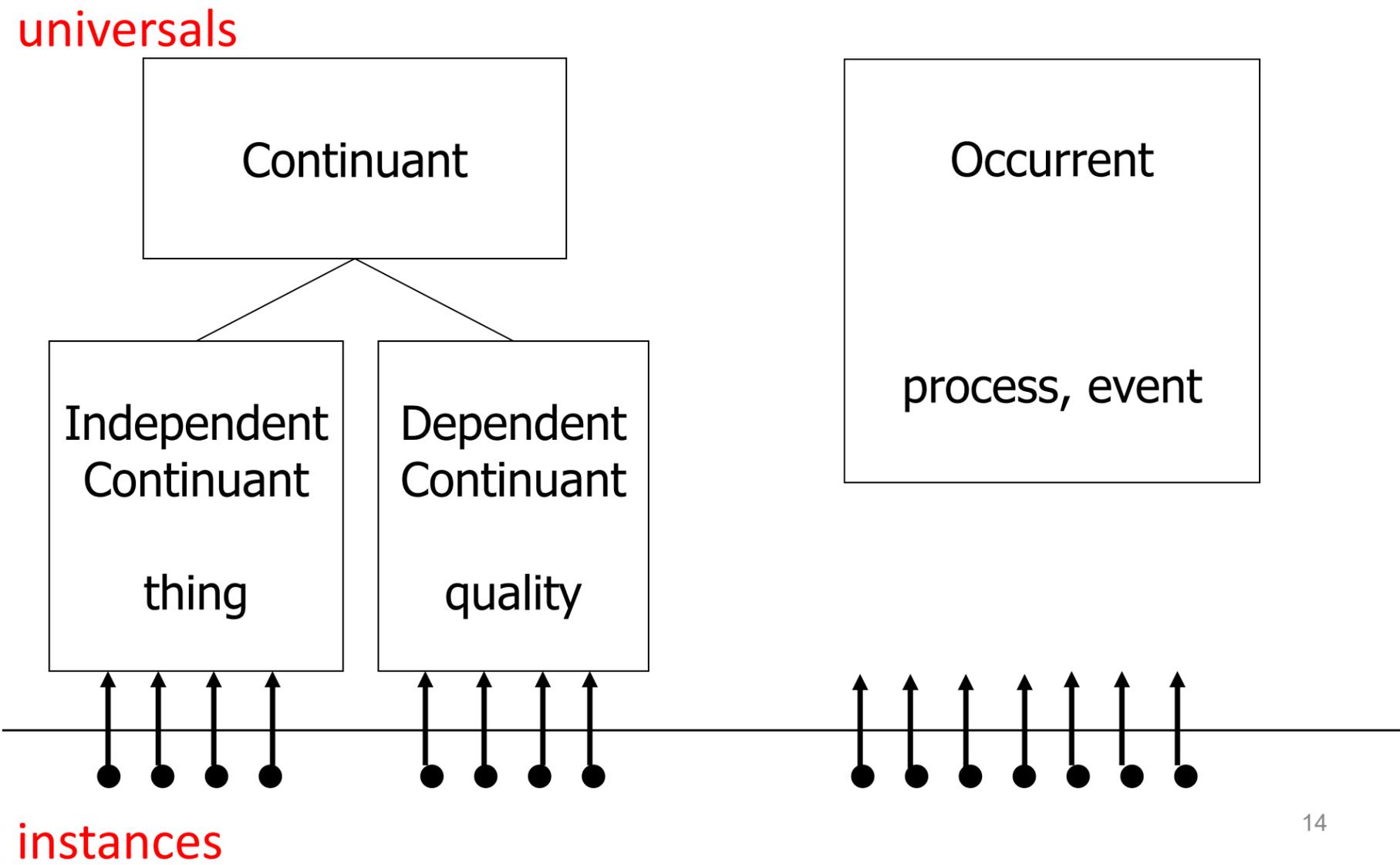
# *depends\_on*



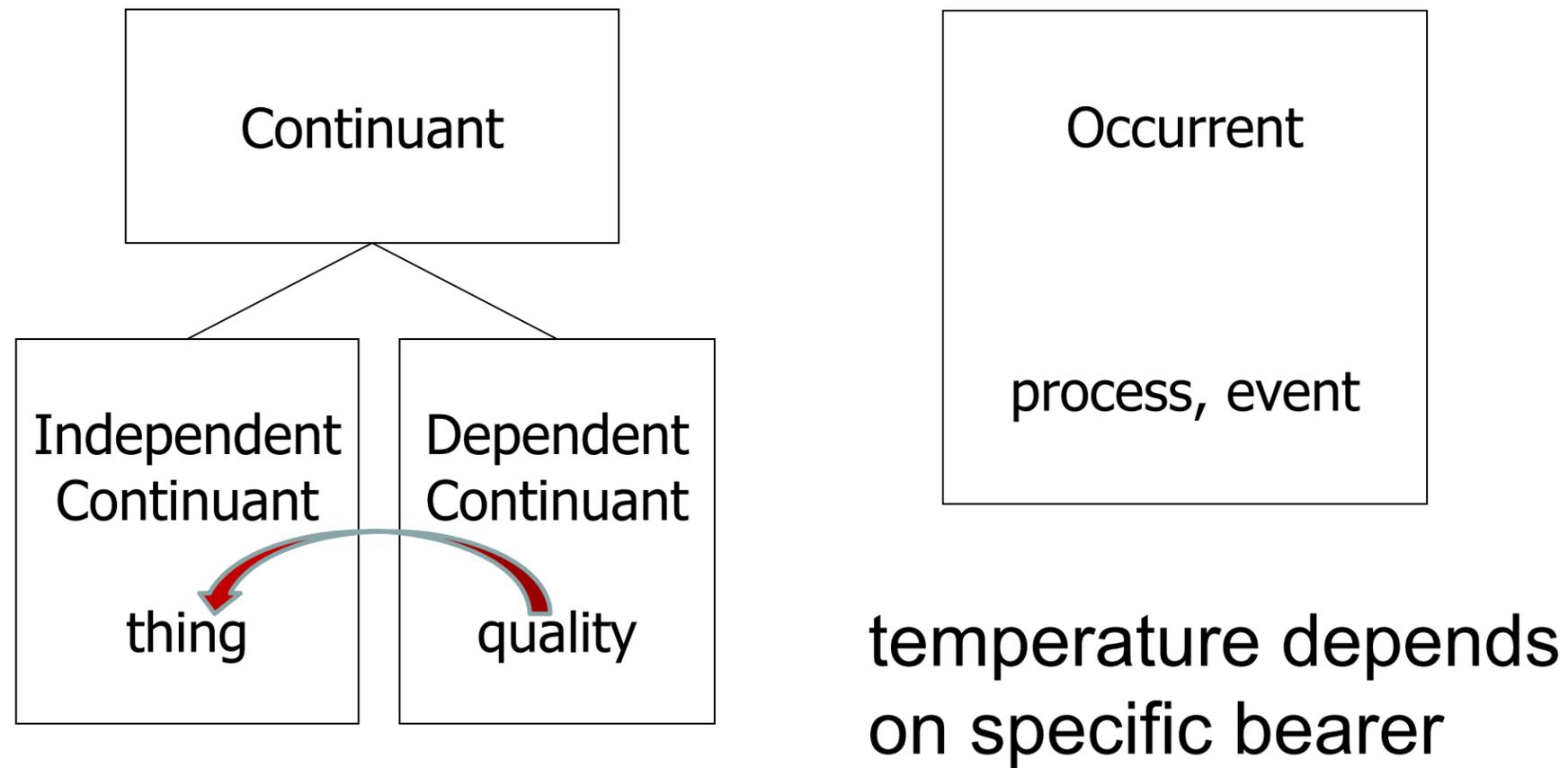
# *depends\_on*

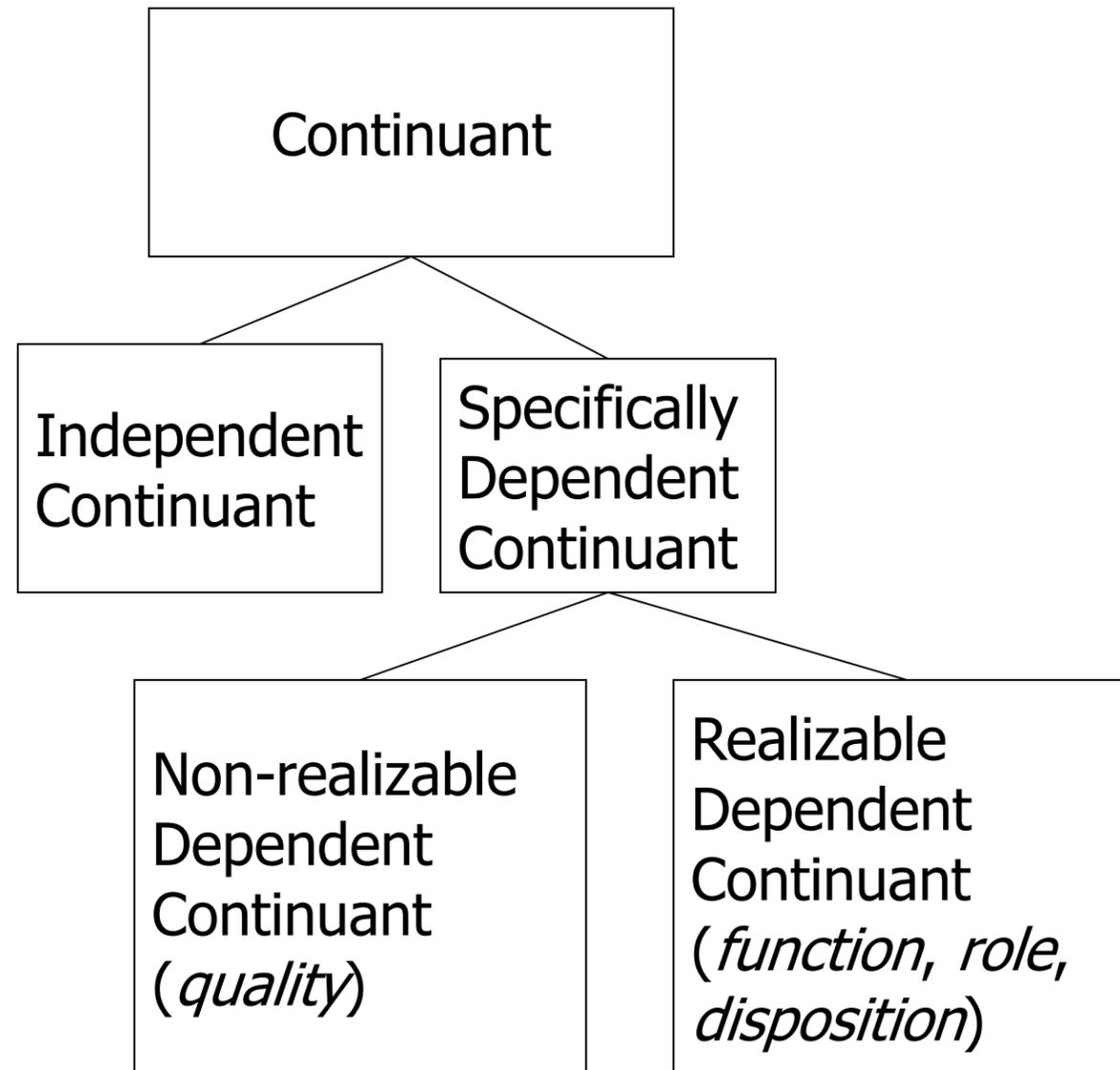


# *instance\_of*



# *specifically\_depends\_on*





# Realizable dependent continuants

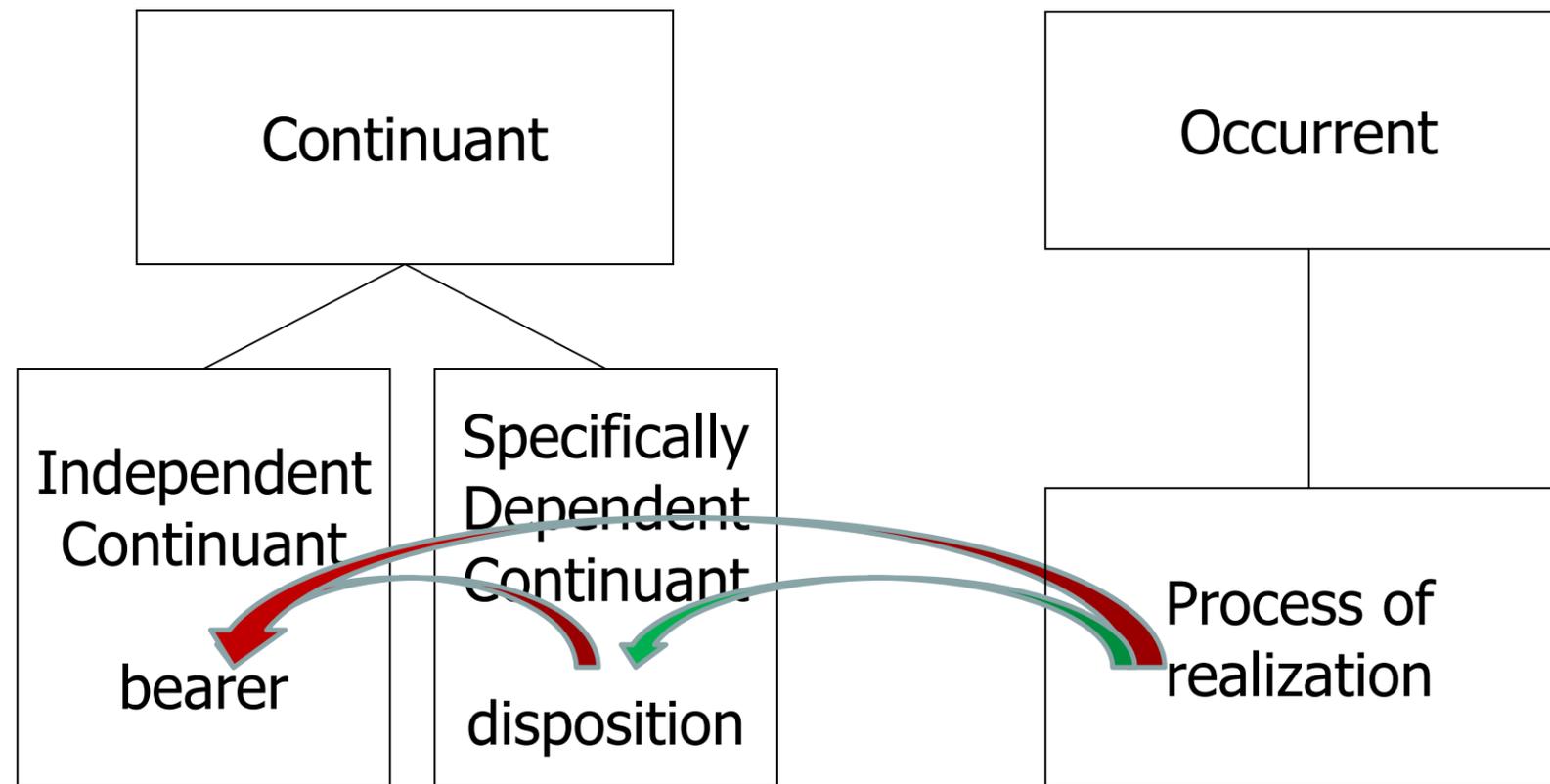
Role: nurse role, pathogen role, food role

Disposition: fragility, virulence, loyalty,  
honesty

Function: to unlock (of a key), to create a  
binding agreement

- all in need of realizations
- qualities are not in need of realizations

*realization specifically\_depends\_on  
realizable*



## Realization (the rough idea)

**execution** of a plan

**expression** of an emotion

**exercise** of a role

**realization** of a disposition

**performance** of a symphony

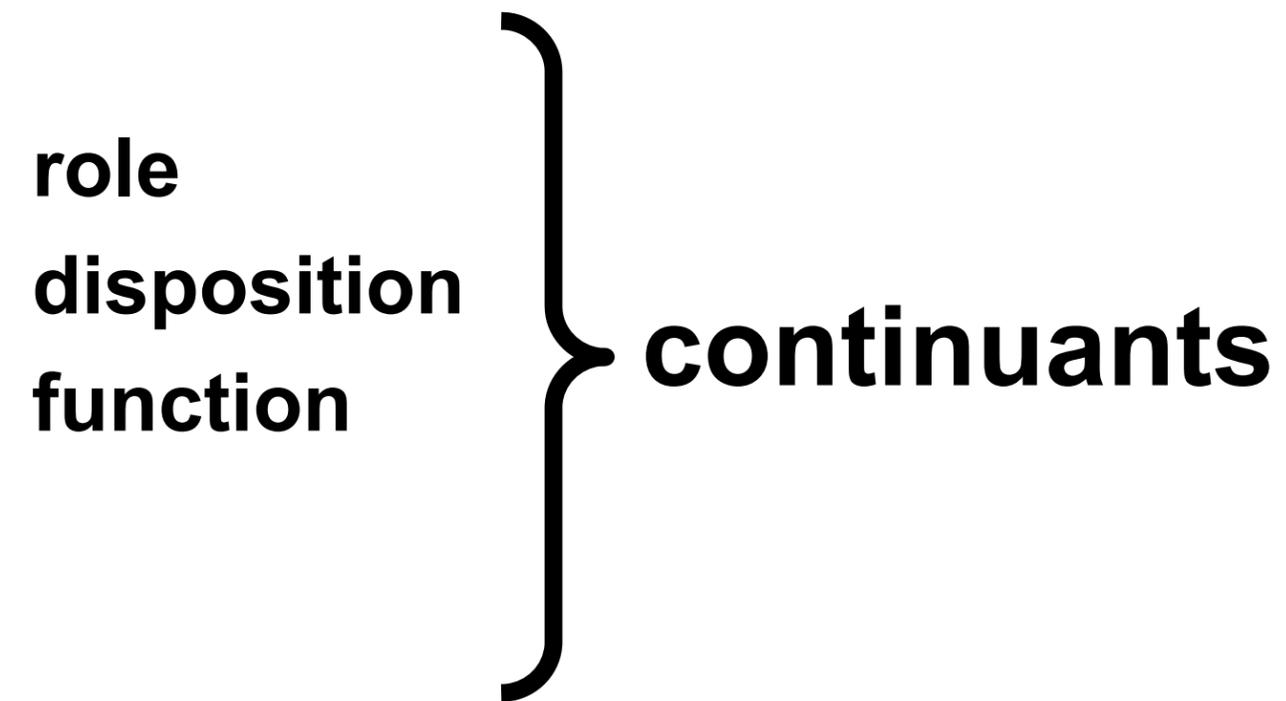
**projection** of a film

**utterance** of a sentence

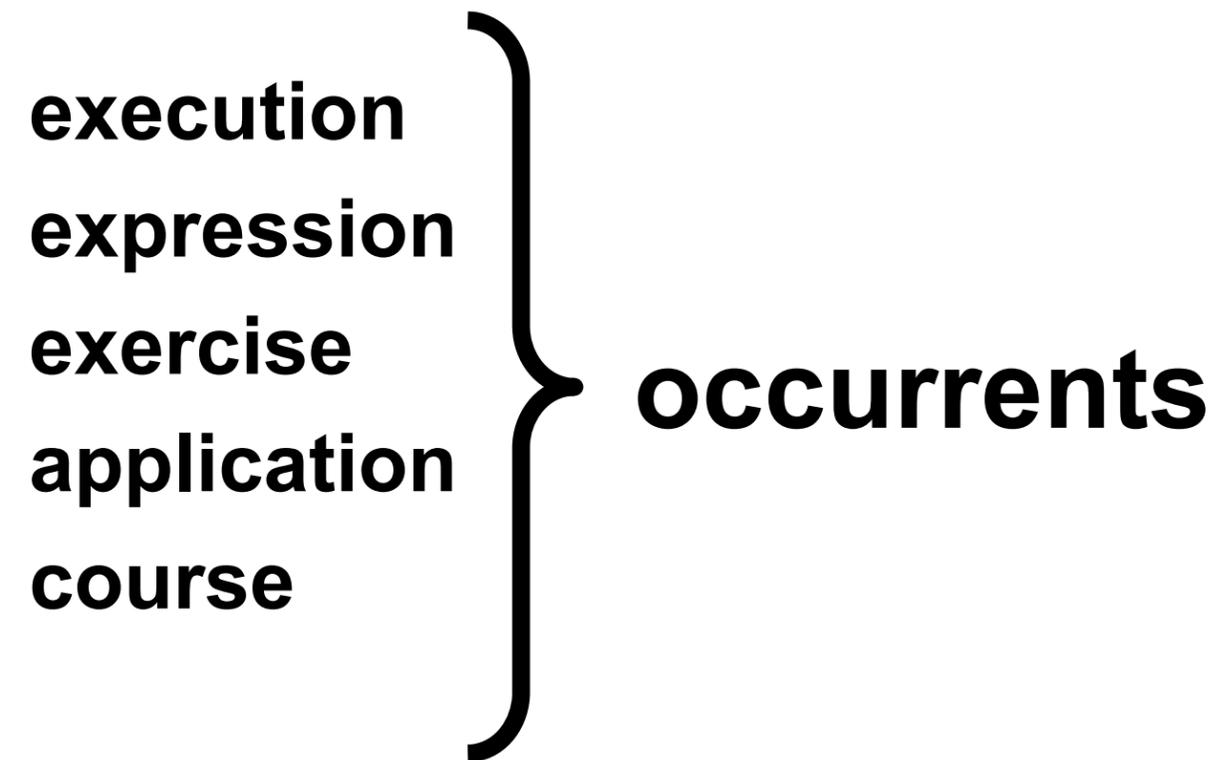
**application** of a therapy

**course** of a disease

# Realizable dependent entities



## Their realizations



# Role (Externally-Grounded Realizable Entity)

role =def. a realizable entity

- which exists because the bearer is in some special physical, social, or institutional set of circumstances in which the bearer does not have to be, and
- is not such that, if it ceases to exist, then the physical make-up of the bearer is thereby changed

## How deal with phase sortals?

John **instance\_of** nurse **at**  $t$  =Def.

John **instance\_of** human being **at**  $t$

& for some  $x$ ,  $x$  **instance\_of** nurse role

&  $x$  **inheres\_in** John **at**  $t$

# Disposition (Internally-Grounded Realizable Entity, Power, Potential)

*disposition* =def.

a realizable entity which is such that, if it ceases to exist, then its bearer is physically changed, and whose realization occurs when this bearer is in some special physical circumstances, in virtue of the bearer's physical make-up

# Hypothesis

Social entities involve combinations of roles and dispositions on the part of (a) individuals, (b) the communities in which they grow up and live

Example: a language, needs competence (*disposition*) on the part of an individual, but also a *disposition* in the wider society to school in correct use (where some people have the *role* of teachers)

# Background presuppositions

Three stages in the development of culture:

1. without language,
2. with language but confined to speech,
3. with writing / printing / CPUs

With 1. and 2. culture is stored in human brains;  
with 3. culture is stored also in external memory  
(cave paintings, servers, dictionaries)

# What's special about humans

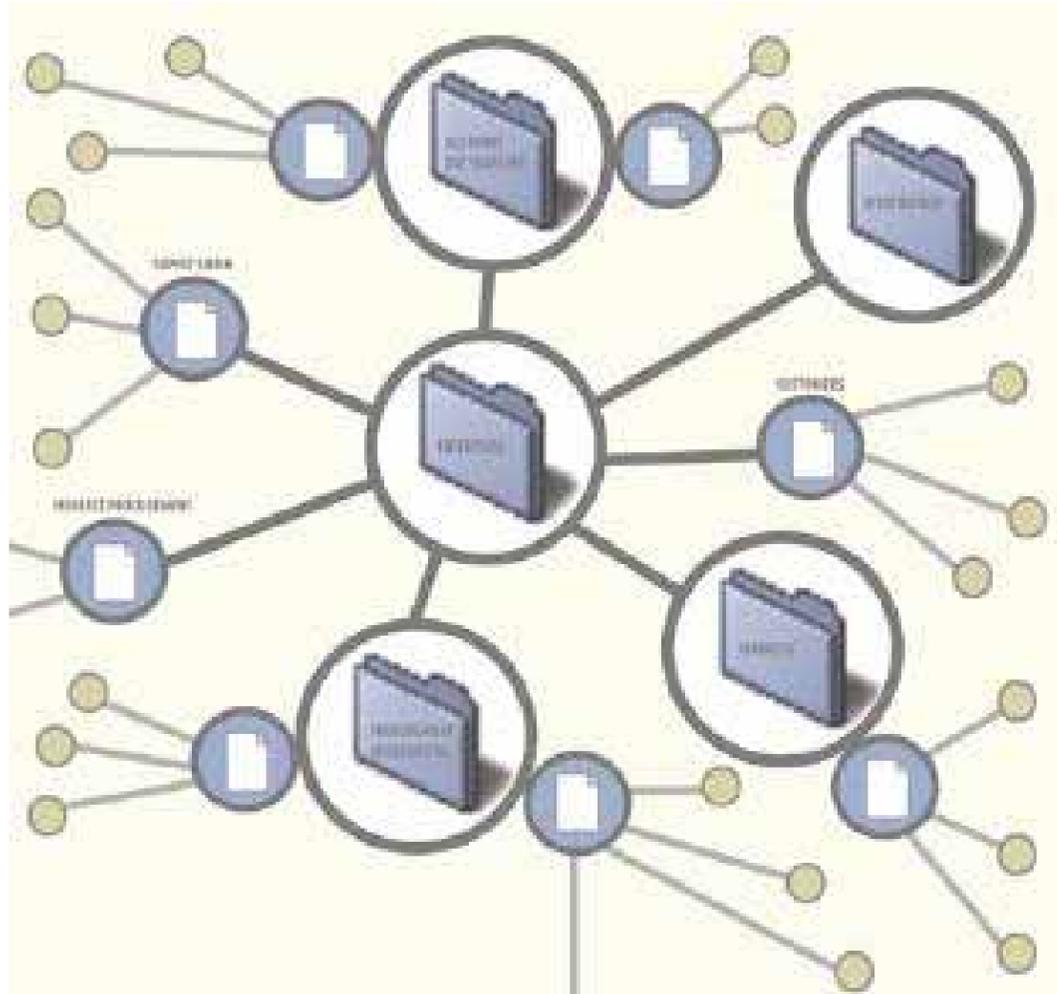
Richersen and Boyd, *Not by Genes Alone*, Chicago, 2005

only humans show much evidence of *cumulative* cultural evolution (p. 107)

as language evolves by small steps, so culture evolves by small steps (p. 36)

## Is culture a matter of information?

*Culture is **information** capable of affecting individuals' behavior that they acquire from other members of their species through teaching, imitation and other forms of social transmission. (Peter J. Richersen and Robert Boyd, *Not by Genes Alone*, Chicago, 2005, p. 5)*



# DOCUMENT ENGINEERING

MODELING FOR  
BUSINESS INFORMATICS  
AND WEB SERVICES

ROBERT J. GLUSHKO  
AND TIM McGRATH

# Document Engineering

Bob Glushko: “A document is a purposeful and self-contained collection of information.”

- focuses on information content, not on the physical container
- sees business collaborations – e.g. between on-line customer credit card authorization service when the latter verifies and charges the customer’s account – as ‘Internet information exchanges’
- but there is more than *information* here
  1. there is the dimension of *sanction*
  2. there is the dimension of *bodily skill*

sanction / punishment

Robert Boyd, *et al.* “Coordinated Punishment of Defectors Sustains Cooperation and Can Proliferate When Rare”, *Science* 30 Apr 2010

Because mutually beneficial cooperation may unravel unless most members of a group contribute, people often gang up on free-riders, punishing them when this is cost-effective in sustaining cooperation. ... we present a model of coordinated punishment that is calibrated for ancestral human conditions [in which] The total cost of punishing a free-rider declines as the number of punishers increases. We show that punishment can proliferate when rare, and when it does, it enhances group-average payoffs.

# Humans, Machines, and the Structure of Knowledge

Harry M. Collins

*SEHR*, 4: 2 (1995)

against the idea of knowledge-  
down-a-wire

# against the idea of knowledge- down-a-wire

Imagine a 5-stone weakling having his brain loaded with the knowledge of a champion tennis player.

He goes to serve in his first match

-- Wham! –

his arm falls off.

He just doesn't have the bone structure or muscular development to serve that hard.

## A. Clark, *Being There*

we can rely not merely on information in our brains and on messages (speech, emails ...)  
but also on

external scaffolding = maps, models, tools,  
books, culture, google

we act so as to simplify cognitive tasks by  
"leaning on" the structures in our environment.

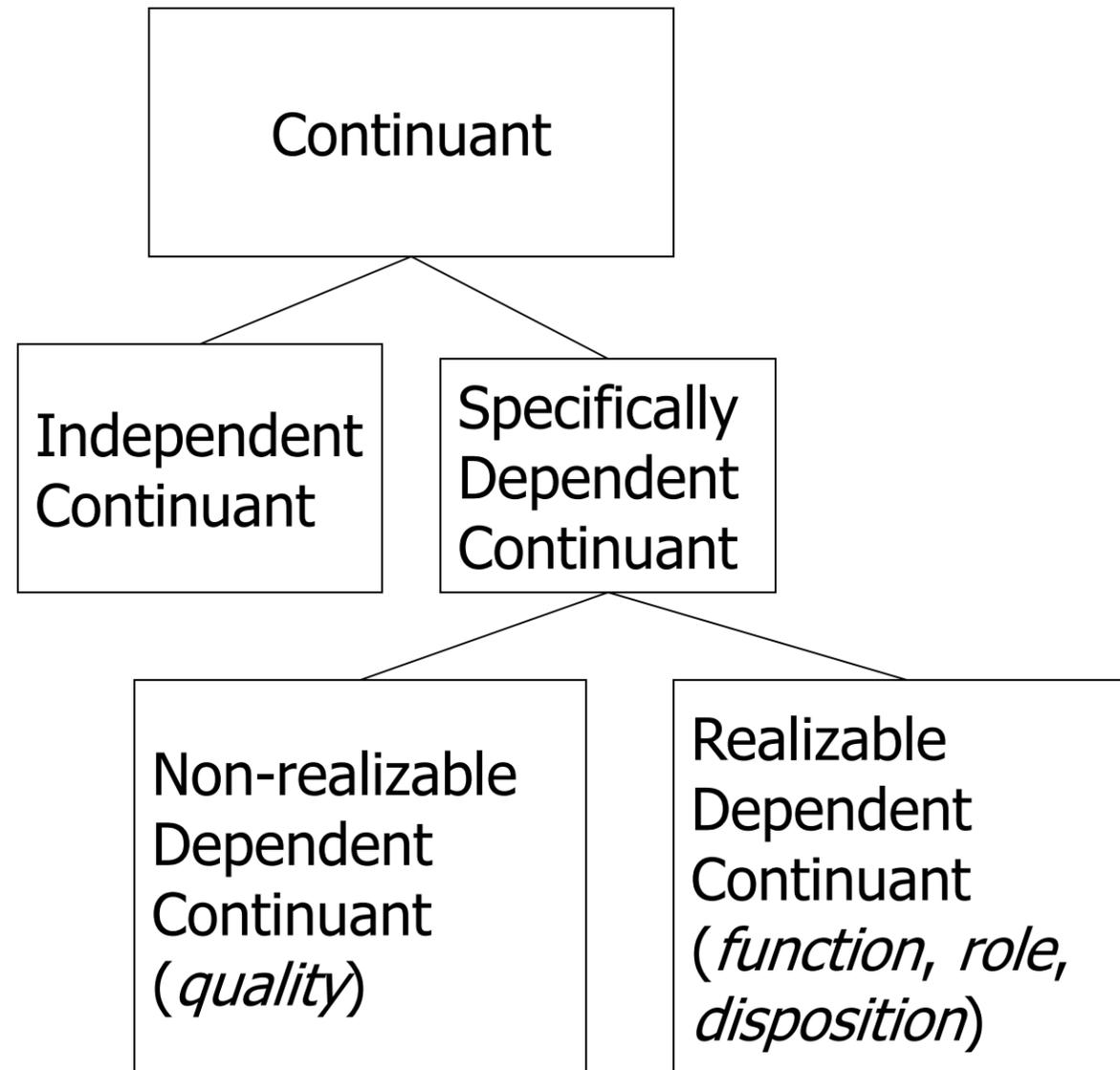
# Types of knowledge/ability/skill

1. those that can be transferred simply by passing signals from one brain/computer to another.
2. those that can't:
  - here the "hardware" is important; abilities/skills/attractors/pipelines contained
  - (a) in the body
  - (b) in the world

# Hypothesis

To understand cooperation we need to understand obligations, claims, duties, permissions, consents, and other basic deontic entities

where do these sorts of entities belong in BFO?



# Mutual dependence

the **disposition of this key** (to open this lock) is mutually dependent on the **disposition of this lock** to be opened by this key

husband / wife  
doctor / patient  
host / pathogen

## Mutual dependence

the **disposition of this key** (to open this lock) is mutually dependent on the **disposition of this lock** to be opened by this key

John signs a contract with Mary

He thereby acquires an obligation to do X

Mary acquires a claim on John that he do X

Claim and obligation are mutually dependent  
continuants

# Mutual dependence

the **disposition of this key** (to open this lock) is mutually dependent on the **disposition of this lock** to be opened by this key

the key can open multiple locks; the lock can open multiple keys

Mutual generic dependence

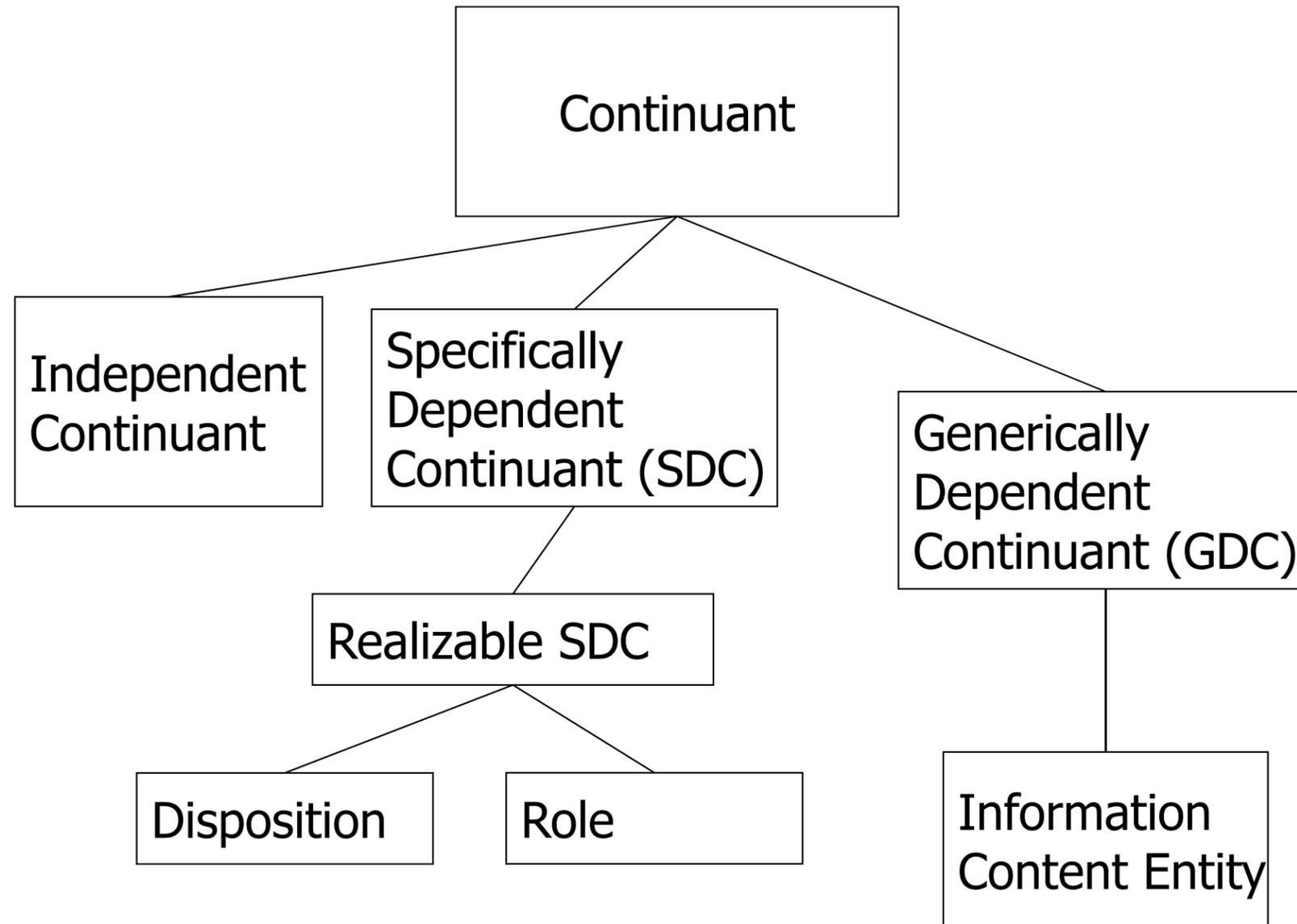
# Generic Dependence

specific dependence:

- my headache depends specifically upon my head
- my temperature depends specifically upon my body

generic dependence:

- this gene sequence depends for its existence on *some* molecule with a certain structure
- this pdf file depends for its existence on *some* memory store with a certain structure



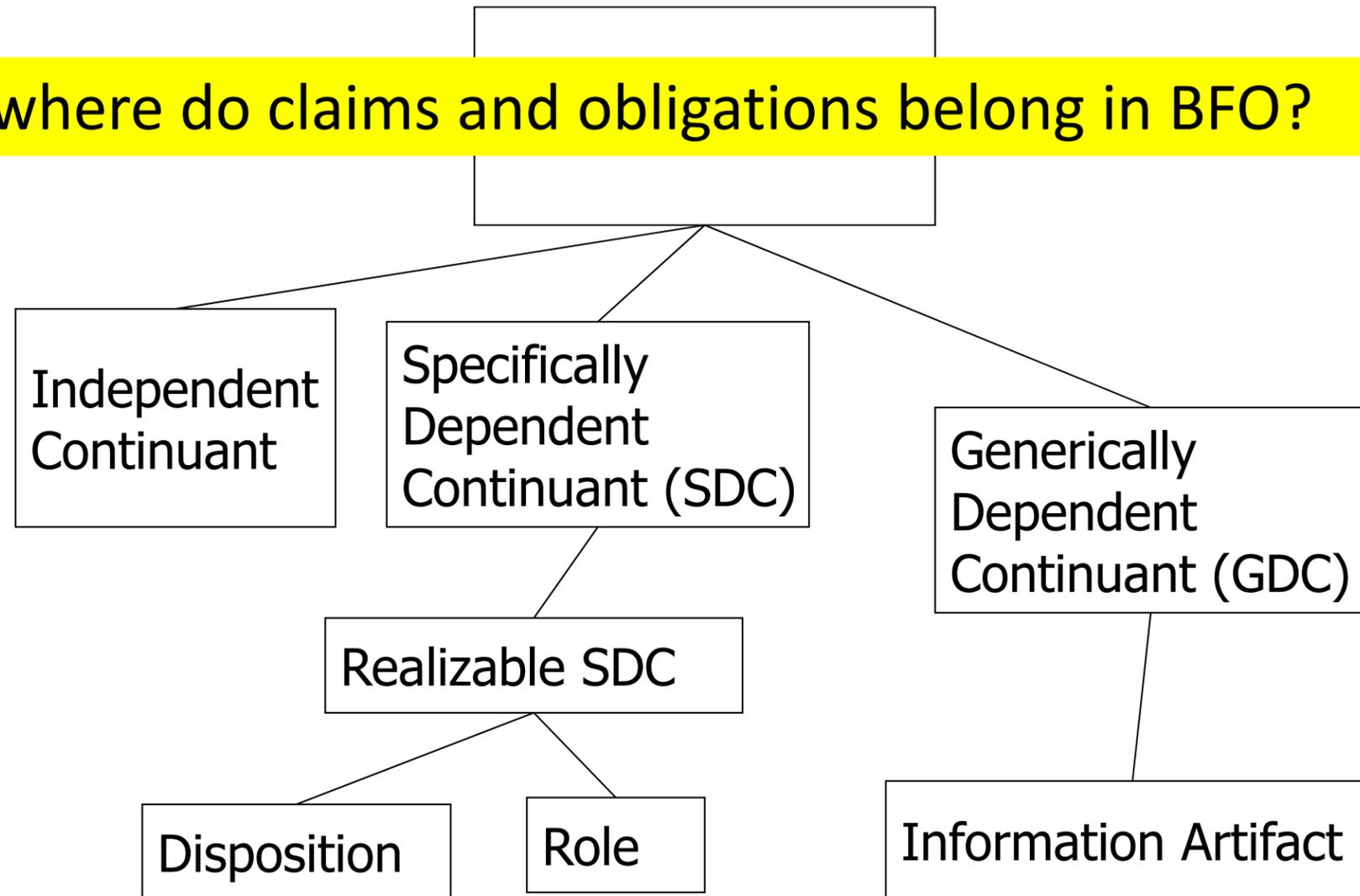
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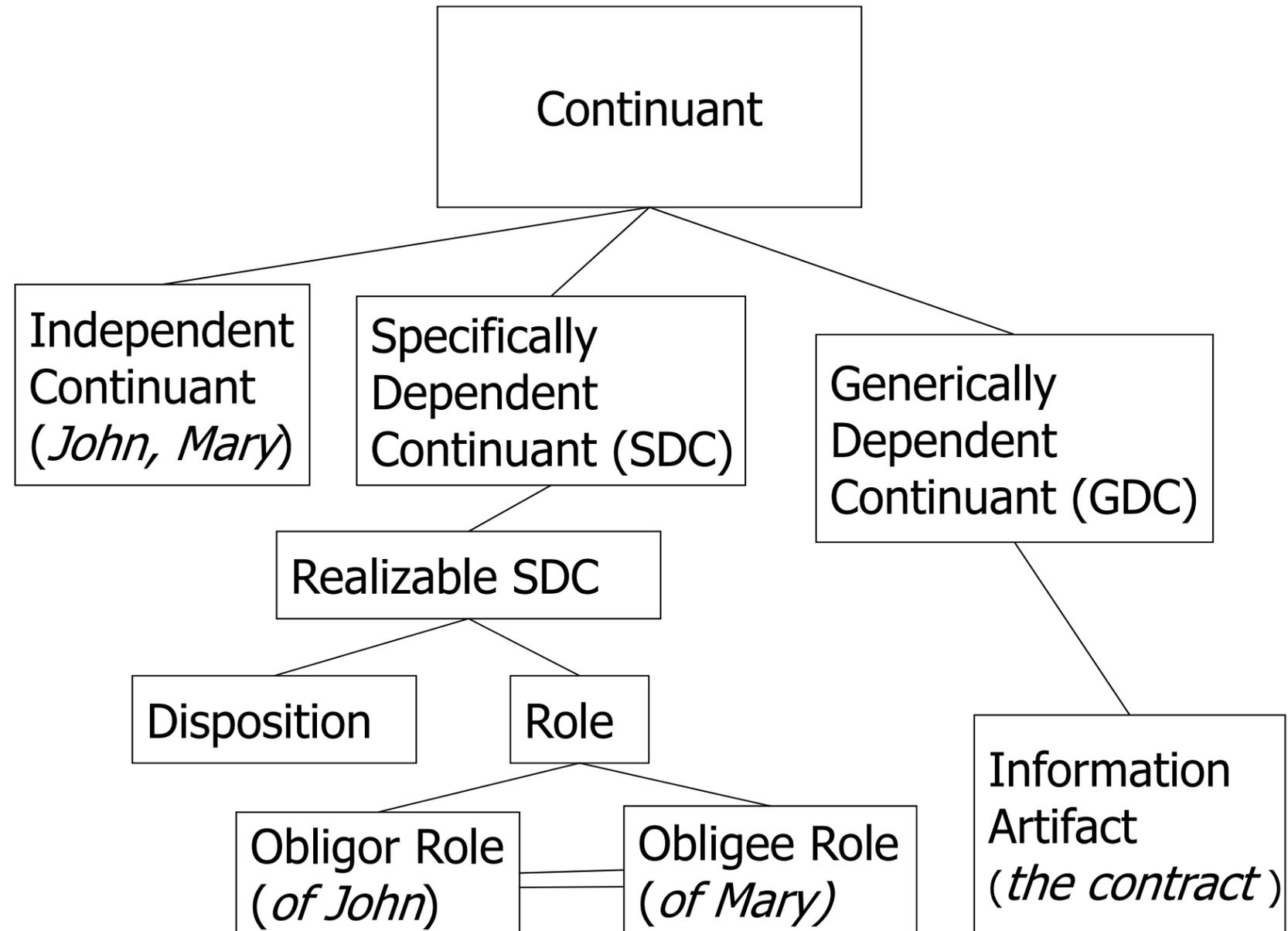
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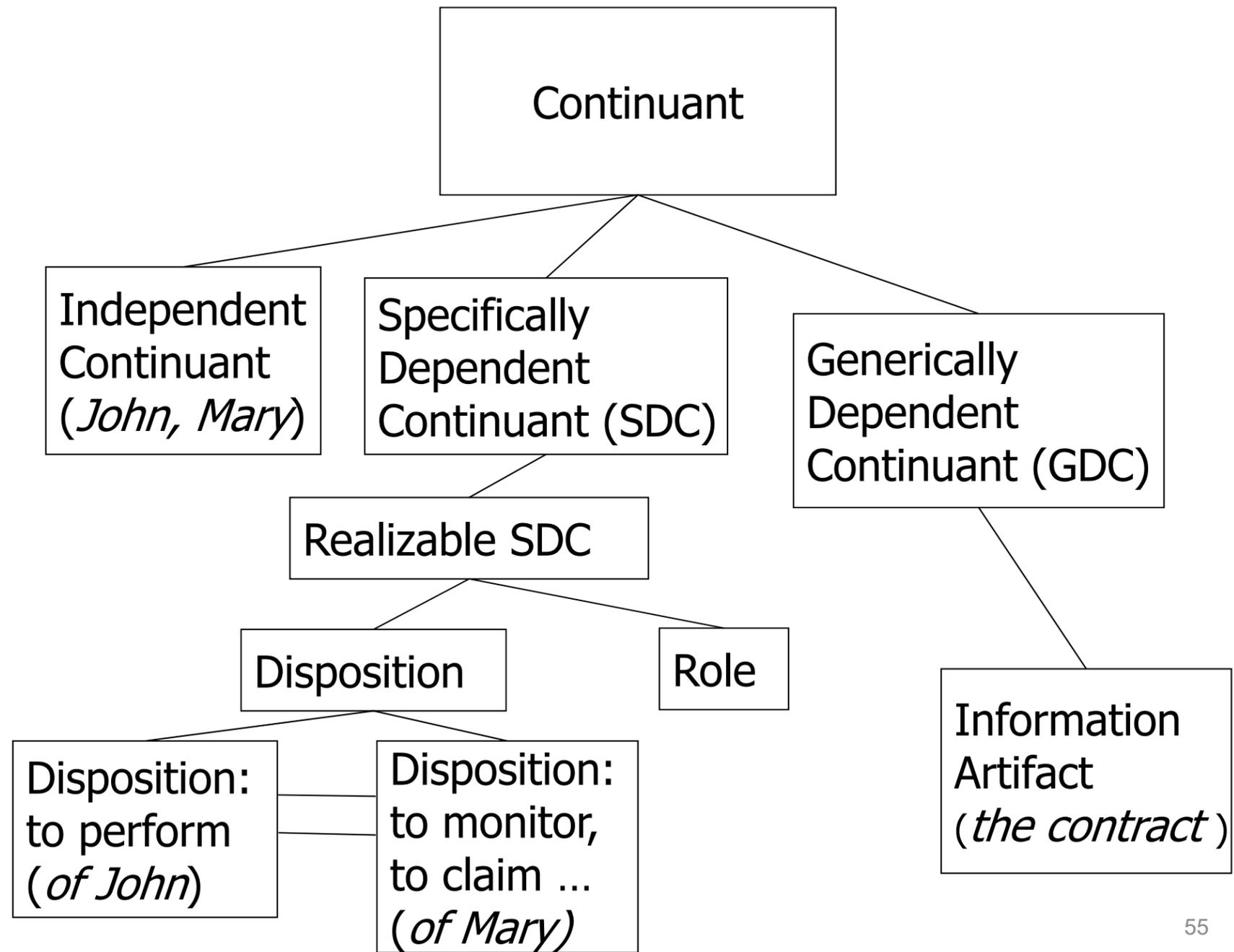
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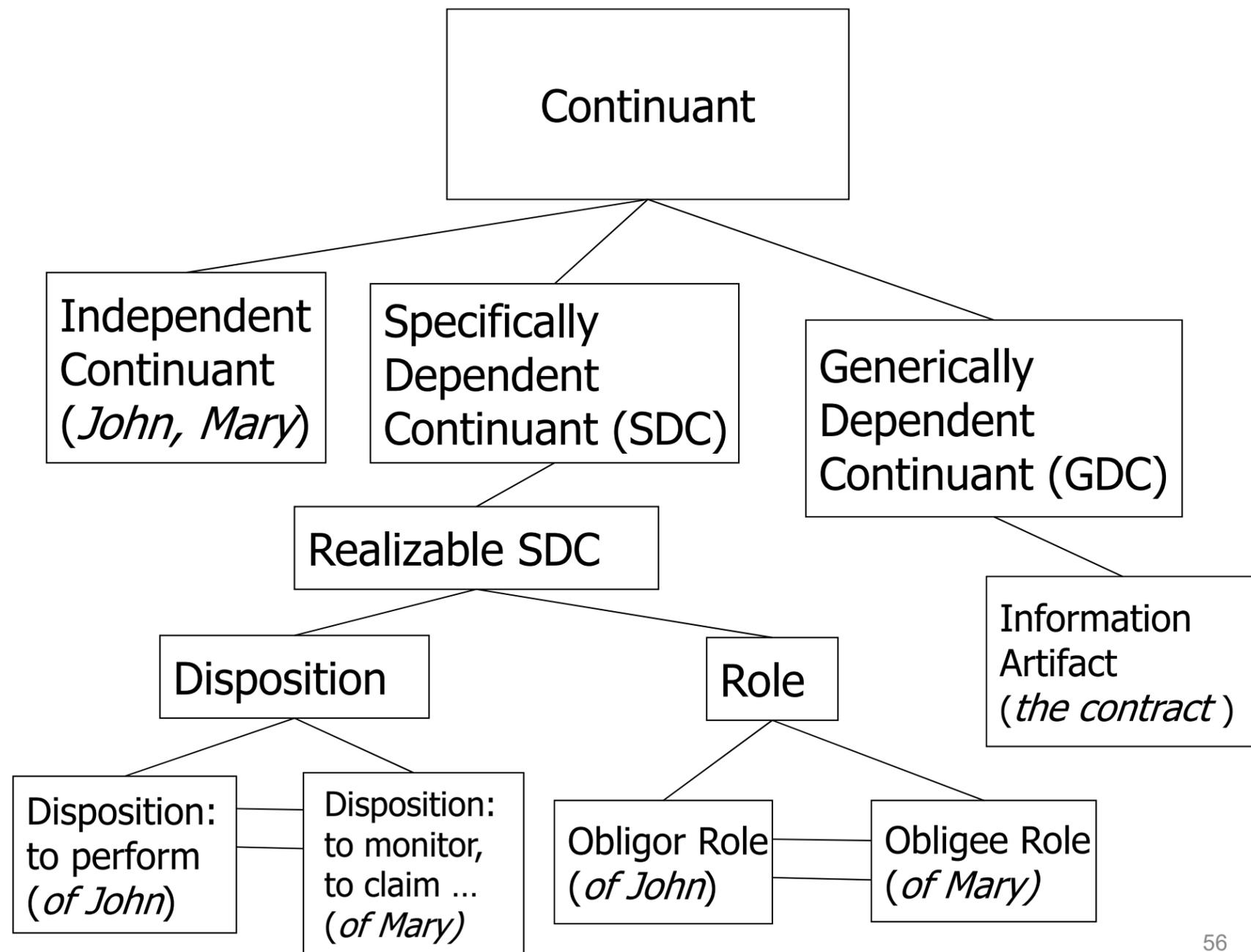
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where do claims and obligations belong in BFO?

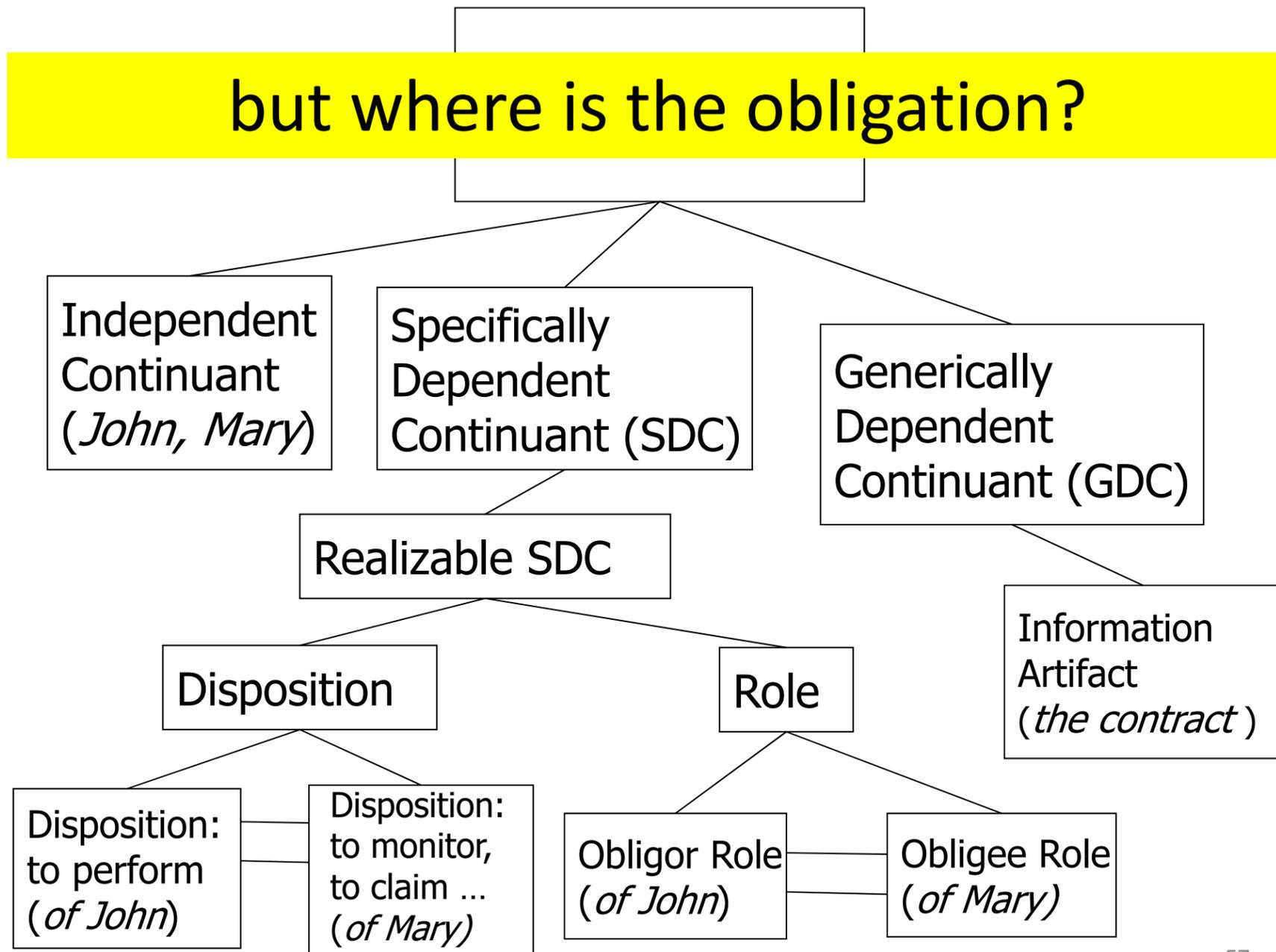


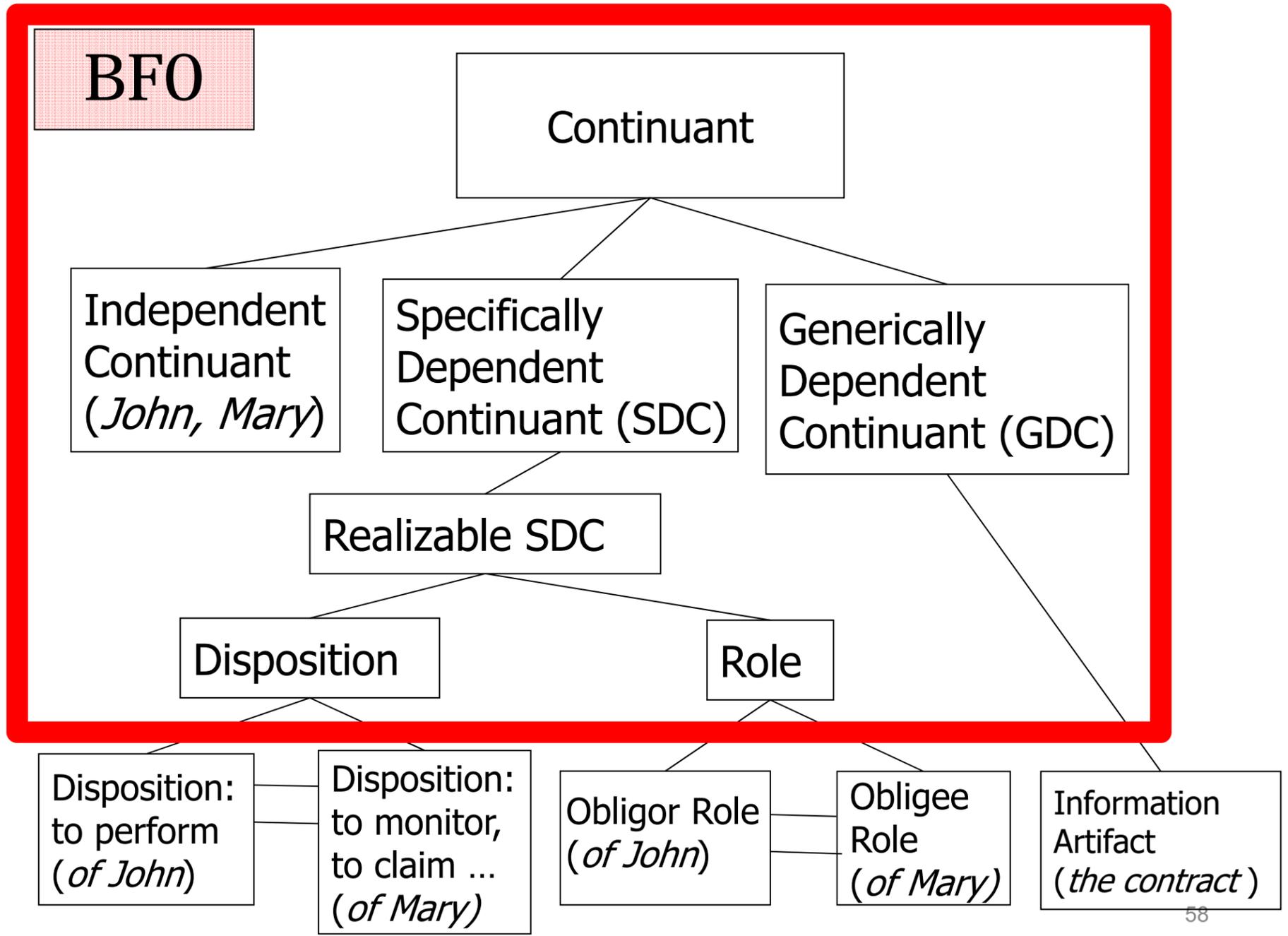


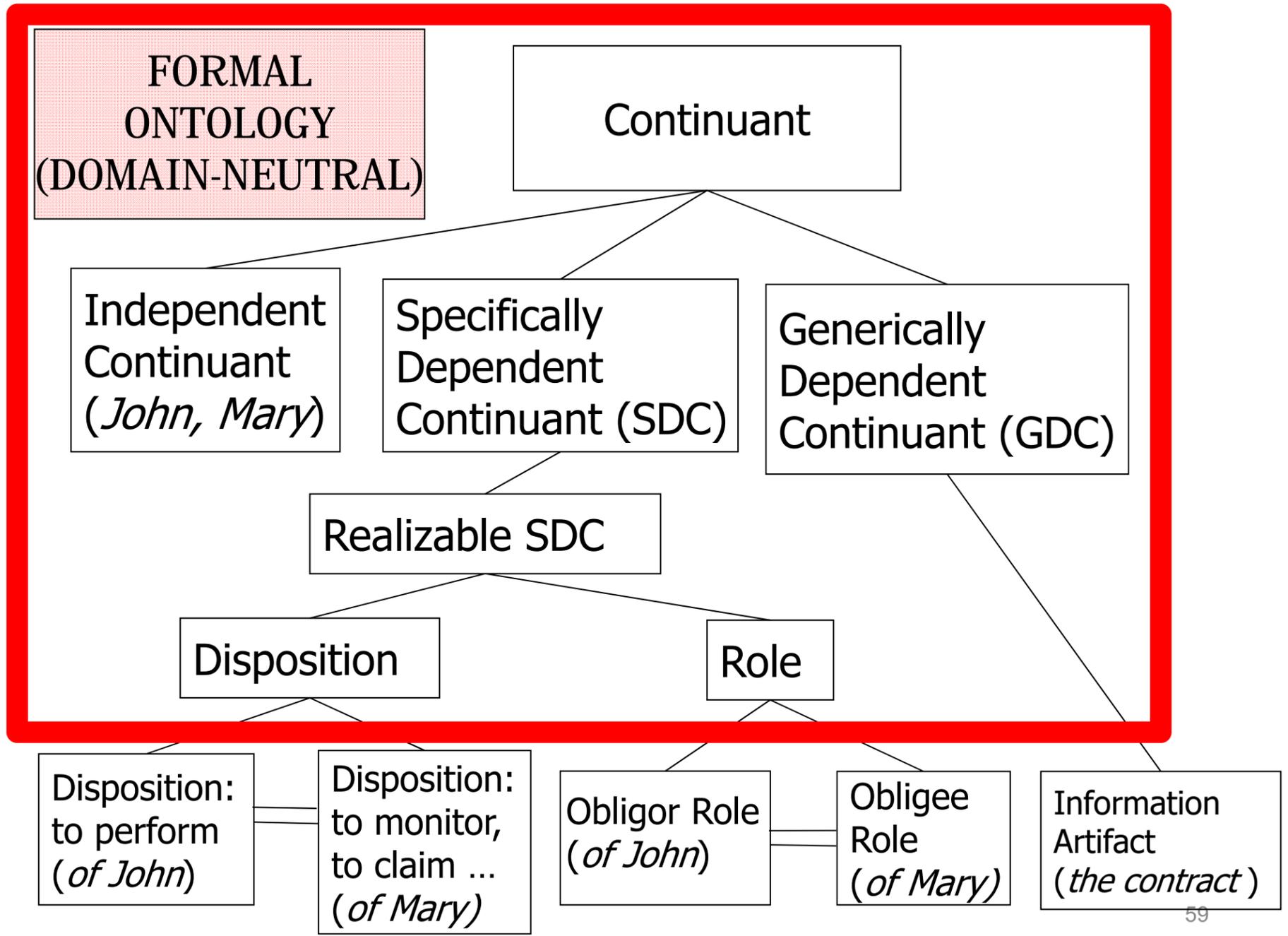


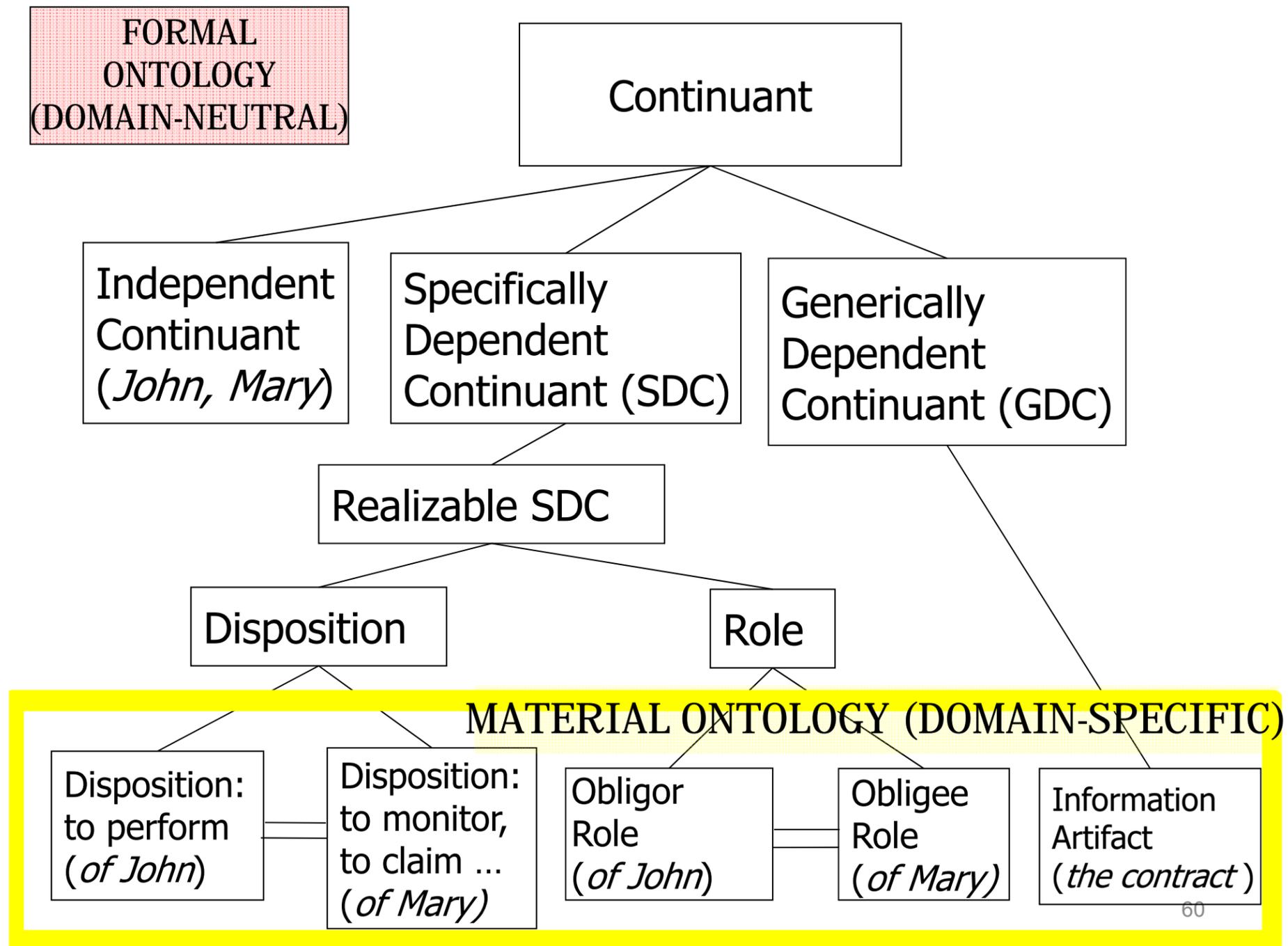


but where is the obligation?









## *Are claim and obligation*

1. universals from a material (=domain specific) ontology?
2. universals from a formal (= domain-neutral) ontology extending BFO?

Trivially: 1.

Does the proper treatment of *claim* and *obligation* require one or more new universals to be added to the BFO framework?

Less trivially: no.

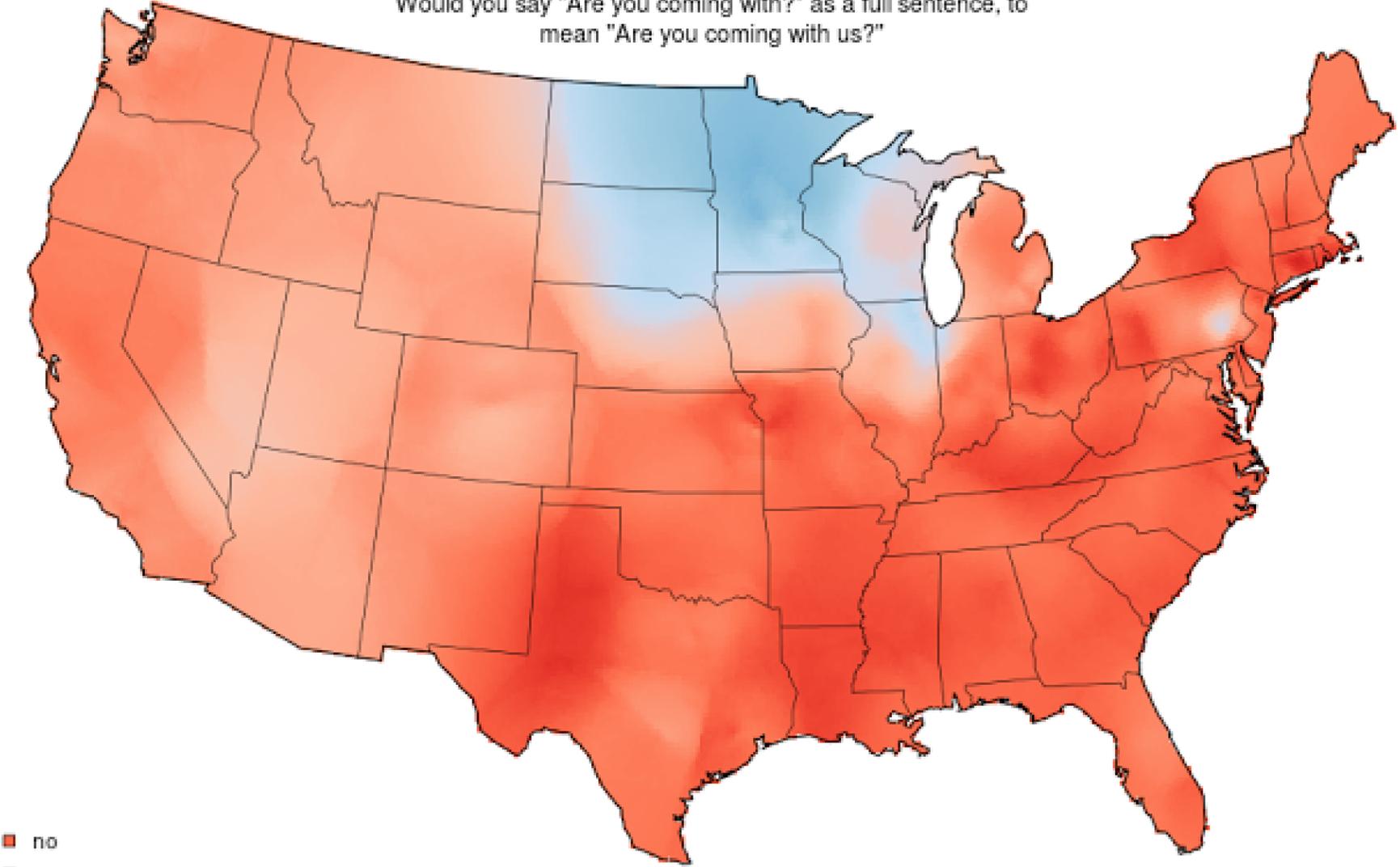
## Compare *language*

Each person's linguistic competence is a disposition

A language itself is (something like) the sum total of the linguistic competences of all its users

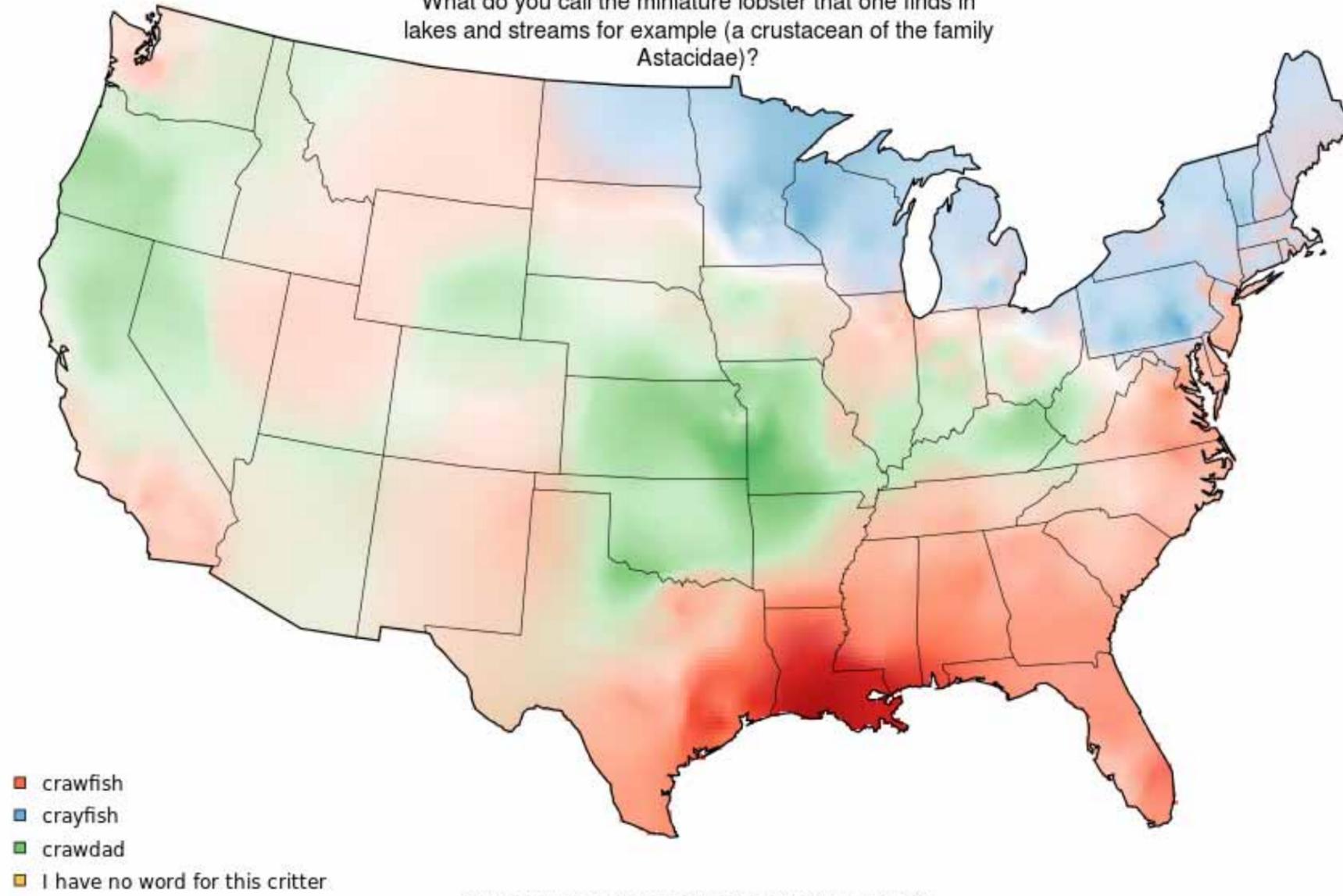
- Con: The definition seems circular
- Con: Works only for natural living languages
- Pro: There is no better account
- Pro: Gives exactly the right account of how languages relate to each other and to dialects (the vagueness of the boundaries of any given language)
- Pro: Accounts for the role of dictionaries, and of the *Académie française*

Would you say "Are you coming with?" as a full sentence, to mean "Are you coming with us?"



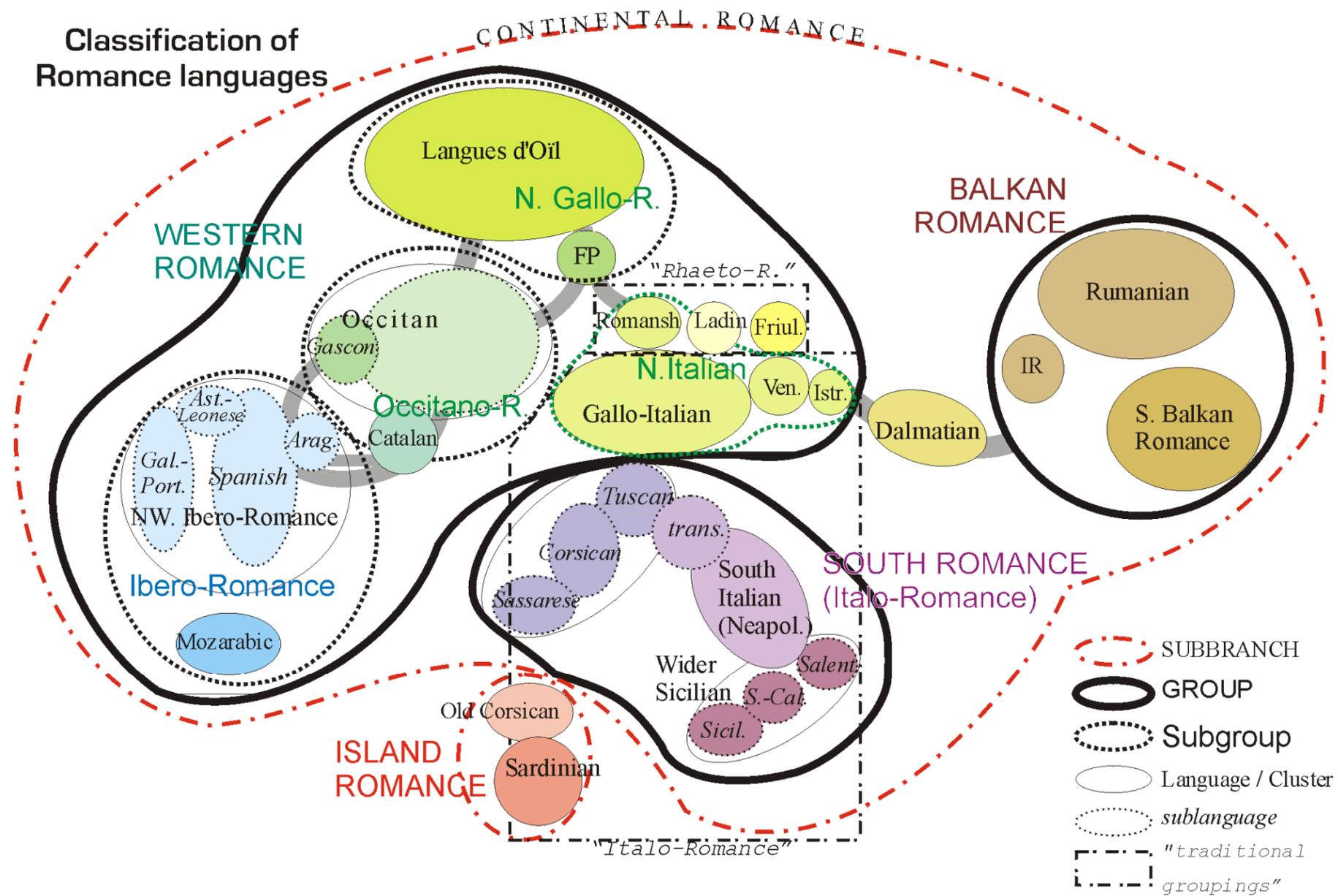
- no
- yes
- other

What do you call the miniature lobster that one finds in lakes and streams for example (a crustacean of the family Astacidae)?



Joshua Katz, Department of Statistics, NC State University

# Classification of Romance languages



# Multiple kinds of linguistic dispositions

Communicative competence

Persuasive competence

Dispositions to use language in solitary thinking

Dispositions to exchange information, gossip, in two-person exchange

Dispositions spread across the entire linguistic community

Dispositions to use language to bring about changes in the world

## Language is more than just a matter of information

- More than just collections of (written and spoken) words
- More than just rules governing written and spoken words

# Thomas Reid (1785)

John promises to Mary  
that he will do X

creates a miniature 'civil society'



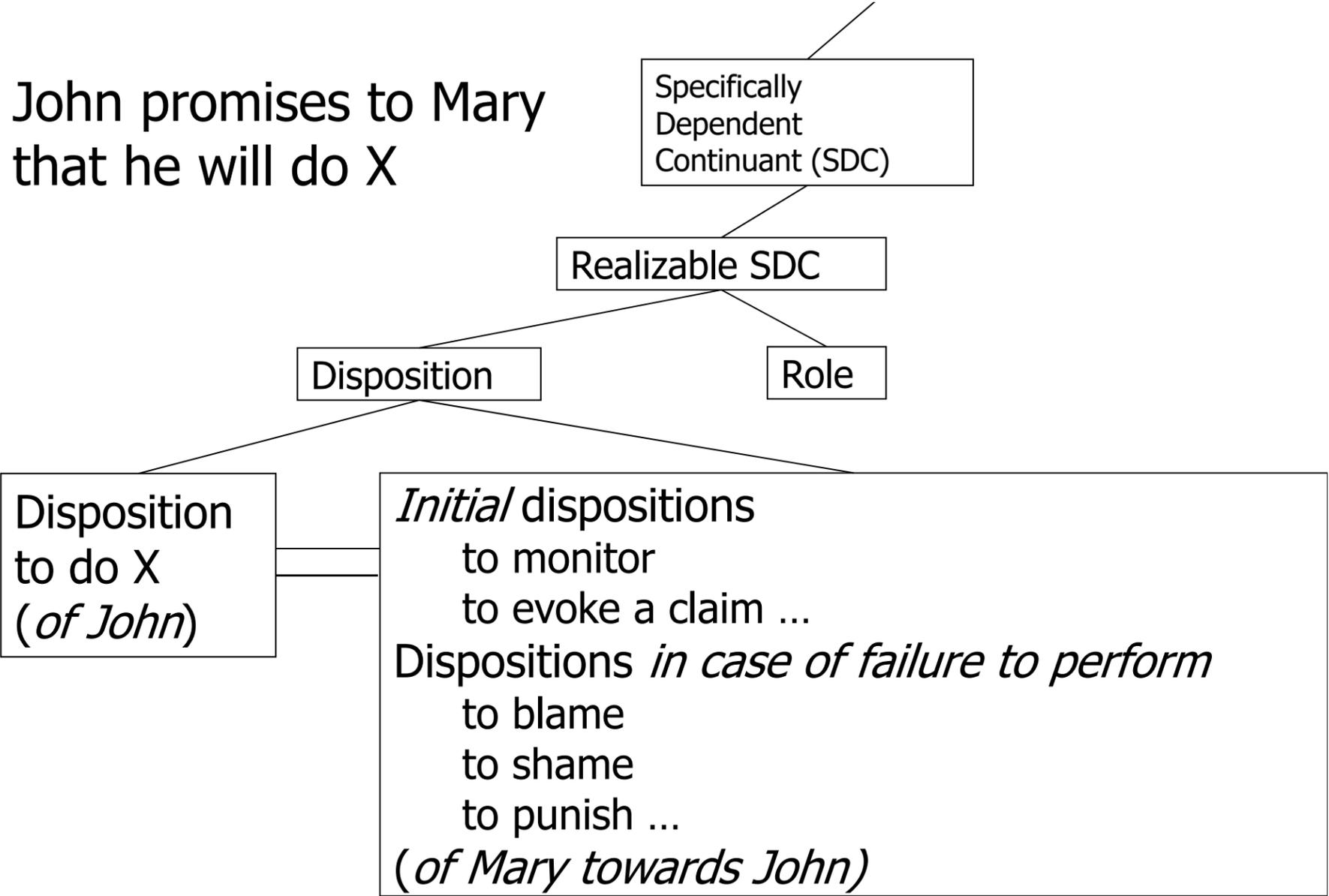
# Reid's theory of 'social operations'

'social acts' vs. 'solitary acts'

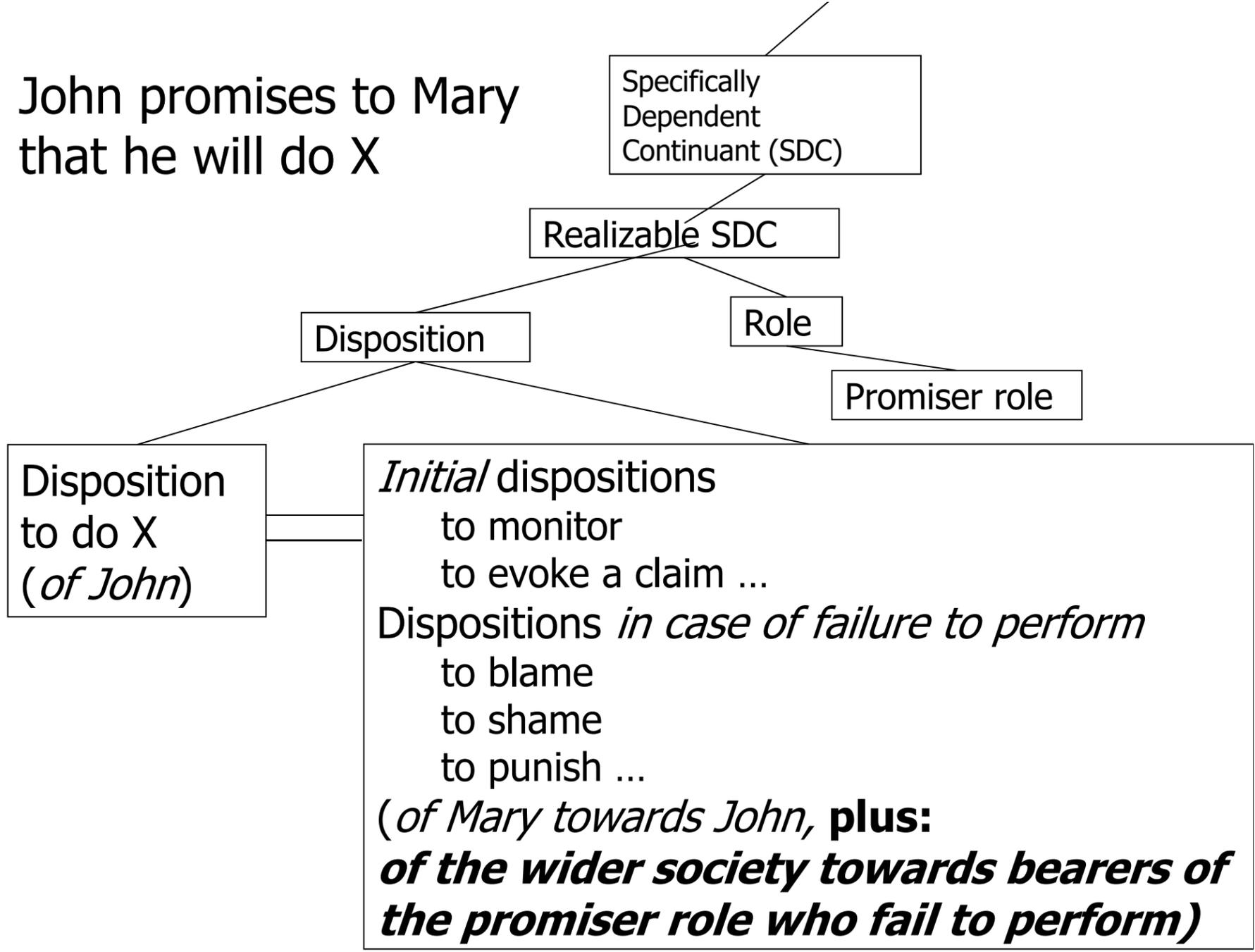
A social act ... must be directed to some other person

Before Reid no recognition of this distinction

John promises to Mary  
that he will do X



John promises to Mary  
that he will do X



Specifically  
Dependent  
Continuant (SDC)

Realizable SDC

Disposition

Role

Promiser role

Disposition  
to do X  
(of John)

*Initial* dispositions  
to monitor  
to evoke a claim ...  
Dispositions *in case of failure to perform*  
to blame  
to shame  
to punish ...  
(of Mary towards John, **plus:**  
**of the wider society towards bearers of**  
**the promiser role who fail to perform**)

# Hypotheses

1. any society with no widespread disposition to sanction in cases of failure to perform also has no obligations
2. the core structure described on the previous slide is an attractor – there will be a tendency for deviations from this structure – for instance on the part of [Fake Online Locksmiths](#) – to be eliminated through the workings of social and market forces

## Aadil Kurji, “An Update Semantics for Promises and Other Obligation-Creating Speech Acts”

<i>Normative Force</i>	<i>Punishment</i>
Authority	Reprimand
Honour	Rebuke (Disappointment)
Promise	Restitution

Table 7.1: Punitive actions available to the promisee.

What other kinds of sanction do we need to identify?

## Reid on natural (gesture) language

The elements of the “natural language of mankind” are “modulations of the voice, gestures, and features”

“Where speech is natural, it will be an exercise, not of the voice and lungs only, but of all the muscles of the body; like that of dumb people and savages”.

Sanction upon failure to perform may involve gestural language – gossip, sneering, raising of eyebrow, losing face, importance of reputation, credentials, trust, ...

# Adolf Reinach



# **Adolf Reinach's theory of social acts (1913)**

**part of a wider ontology of legal phenomena such as contract and legislation**

**a 'contribution to the general ontology of social interaction'**

# Social Acts (Adolf Reinach)

The A Priori Foundations of the Civil Law –  
1913

A study of the ontology of the promise and  
related social phenomena

Part of a wider ontology of legal phenomena  
such as contract and legislation

A 'contribution to the general ontology of  
social interaction'

## Speech Acts (Austin, Searle)

Examples: requesting, questioning, answering, ordering, imparting information, promising, commanding, baptising

- “‘acts of the mind’ which do not have in words and the like their accidental additional expression”
- Social acts which “are performed in the very act of speaking”

# Reinach's typology of acts

spontaneous acts

= acts which consist in a subject's bringing something about within his own psychic sphere,

as contrasted with passive experiences of feeling a pain or hearing a noise

# Spontaneous acts and language

internal vs. external

internal = the act's being brought to  
expression is non-essential

external = the act only exists in its being  
brought to expression (moaning with pain?  
cursing?)

# Self-directability of acts

self-directable vs. non-self-directable

self-directable: love, hate, fear

non-self-directable: commanding,  
requesting, promising

## **Social acts = non-self-directable external spontaneous acts**

which are IN NEED OF UPTAKE:

the issuer of a command must not merely  
utter the command in public;

she must direct this utterance to its  
addressees in such a way that it is  
received and understood by them in an  
appropriate way.

# Reinach on commanding

Commanding is an experience all its own, a doing of the subject to which in addition to its *spontaneity*, its *intentionality* and its *other-directedness*, the *need to be grasped* is also essential

Commanding, requesting, warning ...

are all social acts, which by the one who performs them and *in the performance itself*, are cast towards another person in order to fasten themselves in his soul.

social acts have an inner and an outer side

‘If I say “I am afraid” or “I do not want to do that”, this is an utterance referring to experiences which would have occurred even without any such utterance.

‘But a social act, as it is performed between persons, does not divide into an independent performance of an act and an accidental statement about it;

‘it rather forms an **inner unity** of voluntary act and voluntary utterance.’ (mutual dependence, fusion)

## **The Parts of Social Acts: Linguistic Component**

Reinach: The same words, 'I want to do this for you', can ... function both as the expression of a promise and as the informative expression of an intention.

# The Parts of Social Acts: Underlying Mental Basis

*Social Act*

*Experience*

informing

conviction

asking a question

uncertainty

requesting

wish

commanding

will

promising

will

enactment

will

# Social acts depend on uptake

(contrast: envy, forgiveness)

social acts must be both  
addressed to other people  
and  
registered by their addressees

# Enactments

BGB §1: “The ability of a person to be a subject of rights/law begins with the completion of birth”

This is ‘not any sort of judgement’

**Valid laws shape/create environments:**

‘If a state of affairs stands for a group of subjects as objectively required in virtue of an enactment, then action realizing the state of affairs is consequently required of these subjects.’

# Rechtsfähigkeit

**the ability to be a subject of rights/law**

**is *created* by the speech act/document  
act which is the enactment of a law**

**Ontological magic**

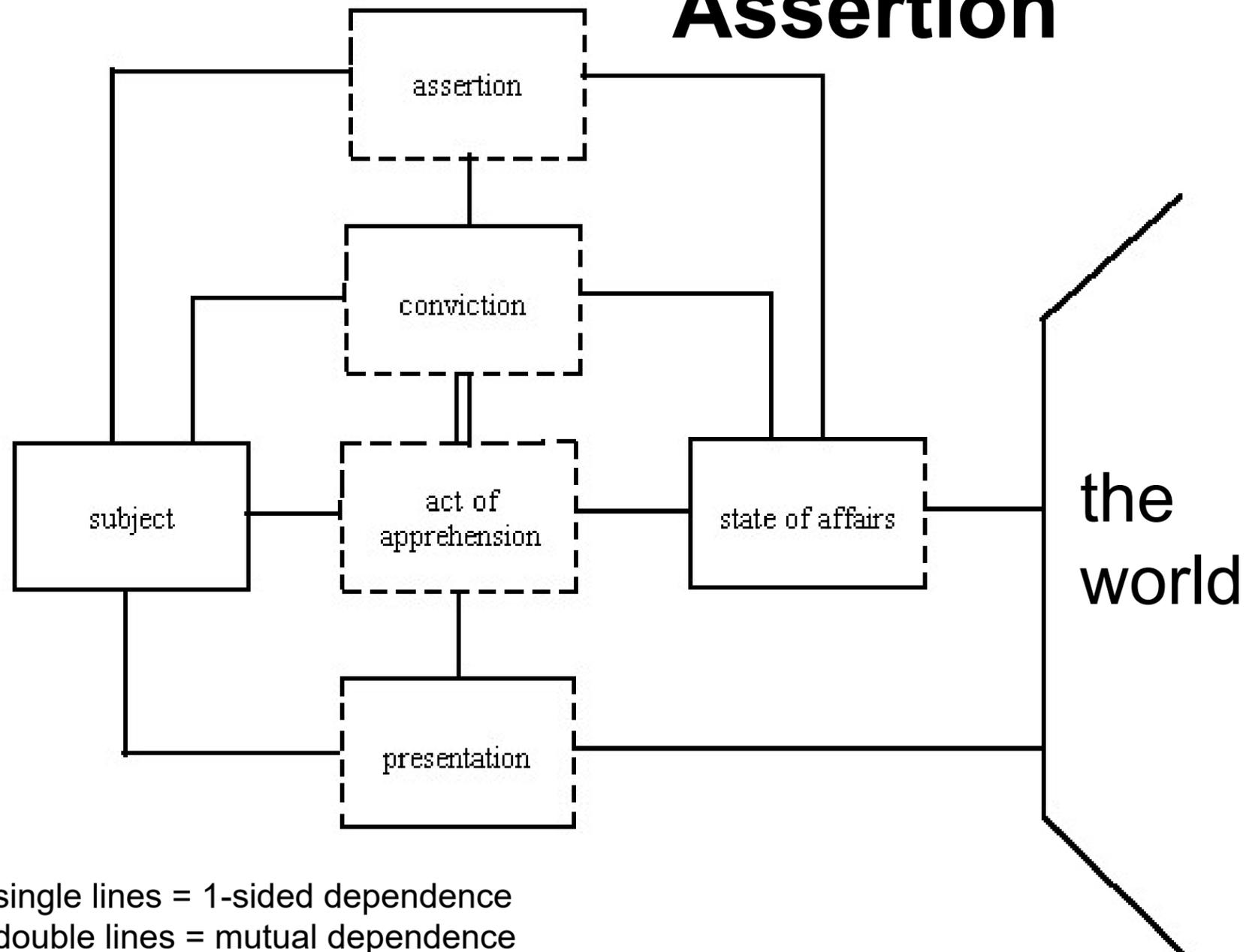
# Ontological Fertility

Assertion gives rise to CONVICTION as its successor state (John *sees that* Mary is swimming)

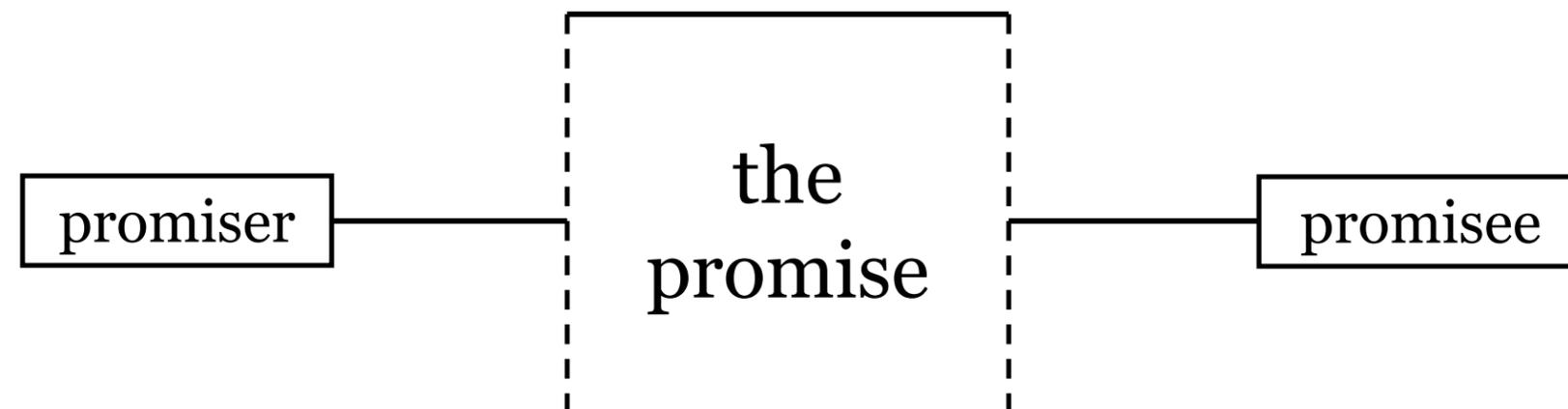
Promising gives rise to CLAIM and OBLIGATION

Commitment to a plan gives rise to DISPOSITION to realize the plan

# Assertion

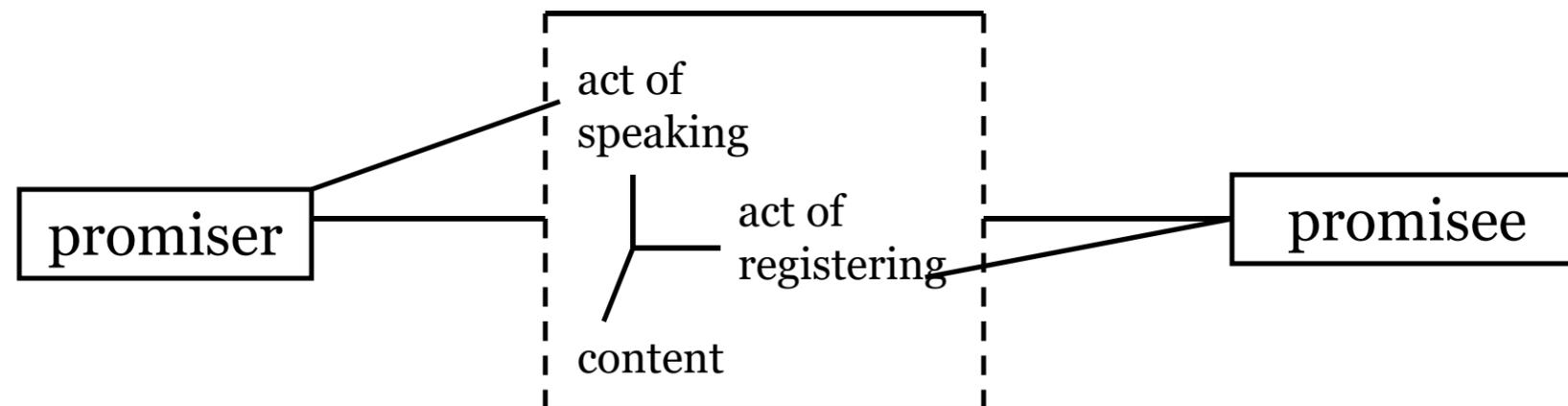


# The Structure of the Promise



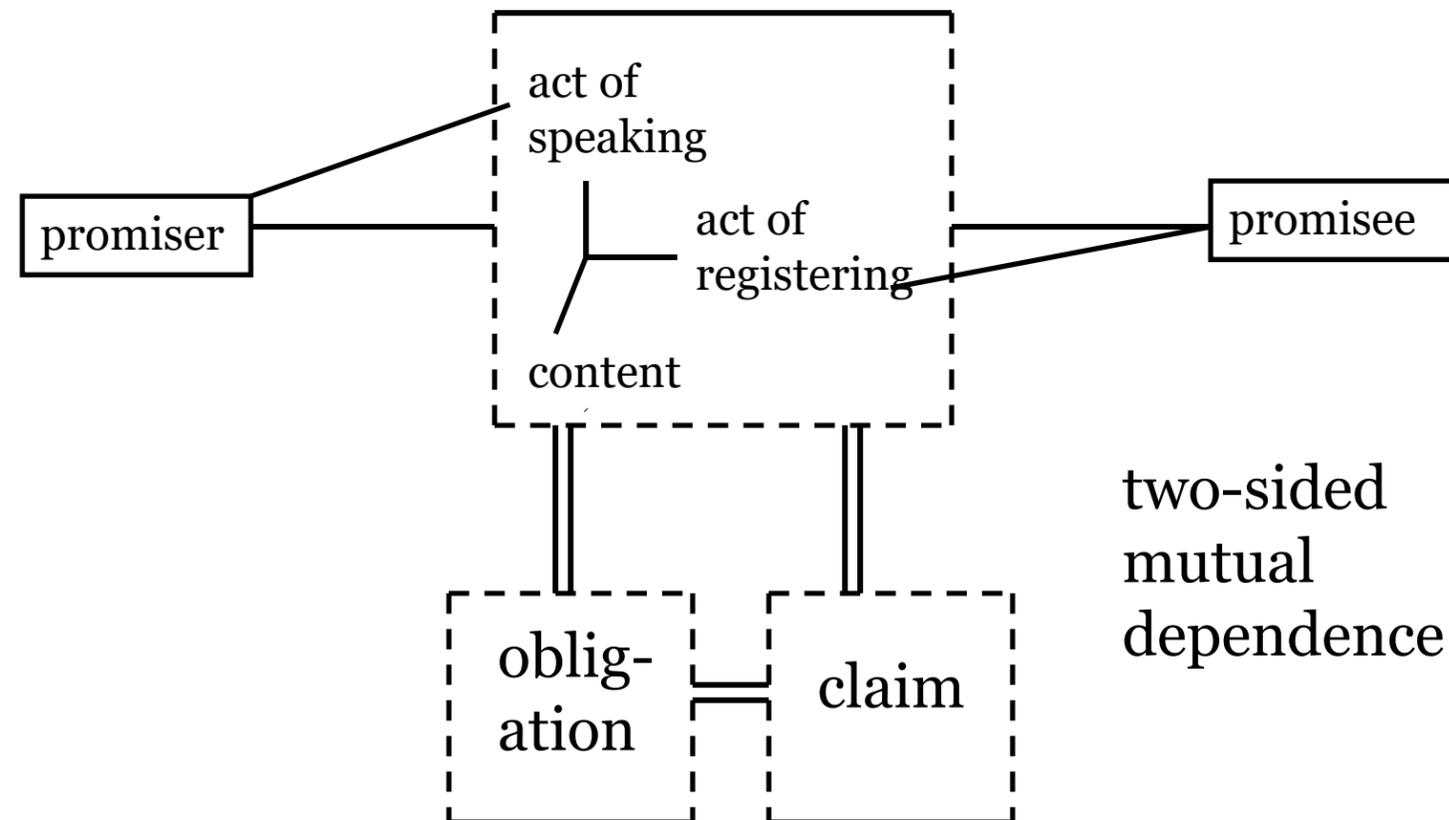
relations of one-sided  
dependence

# The Structure of the Promise

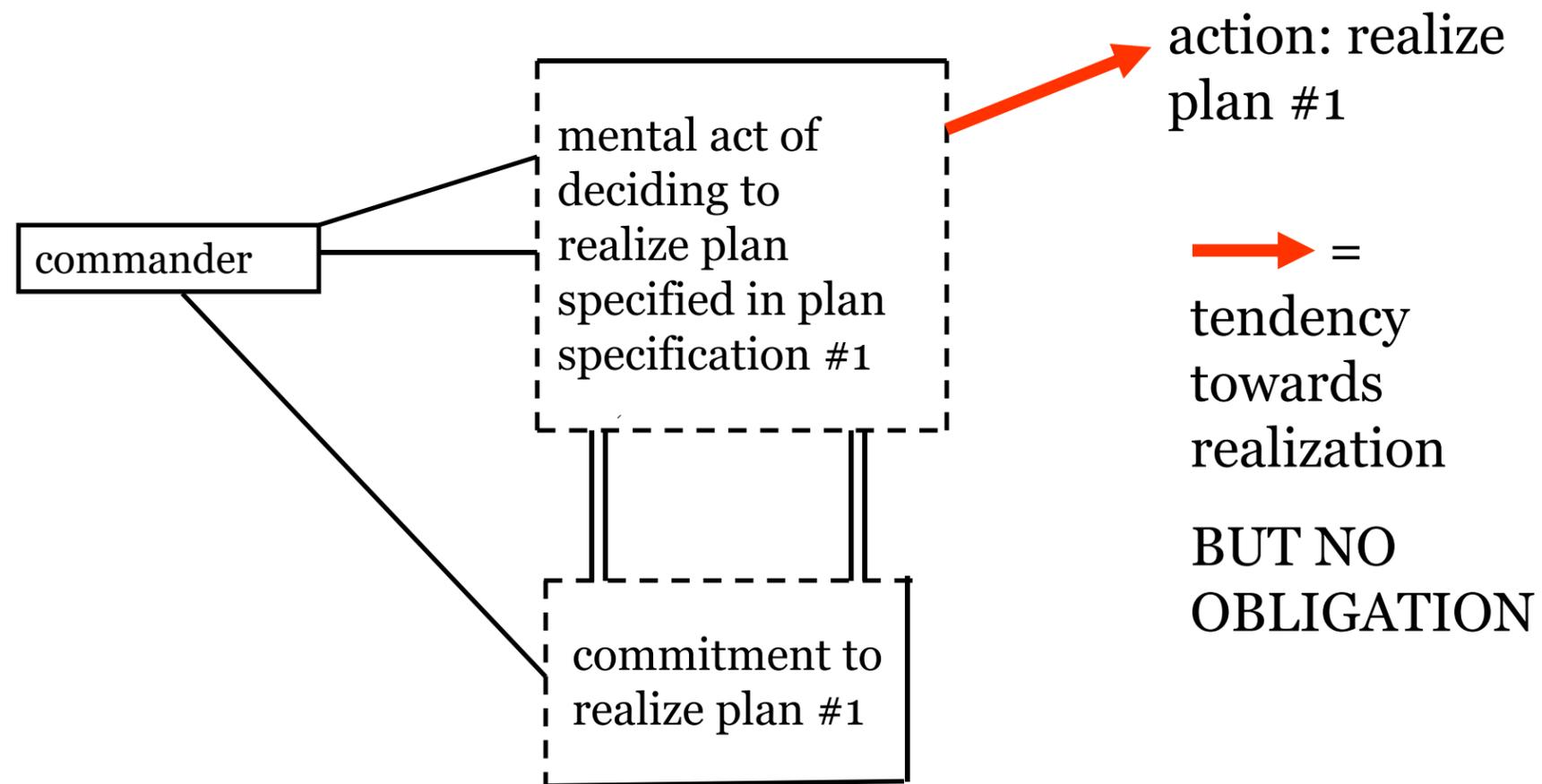


three-sided mutual  
dependence

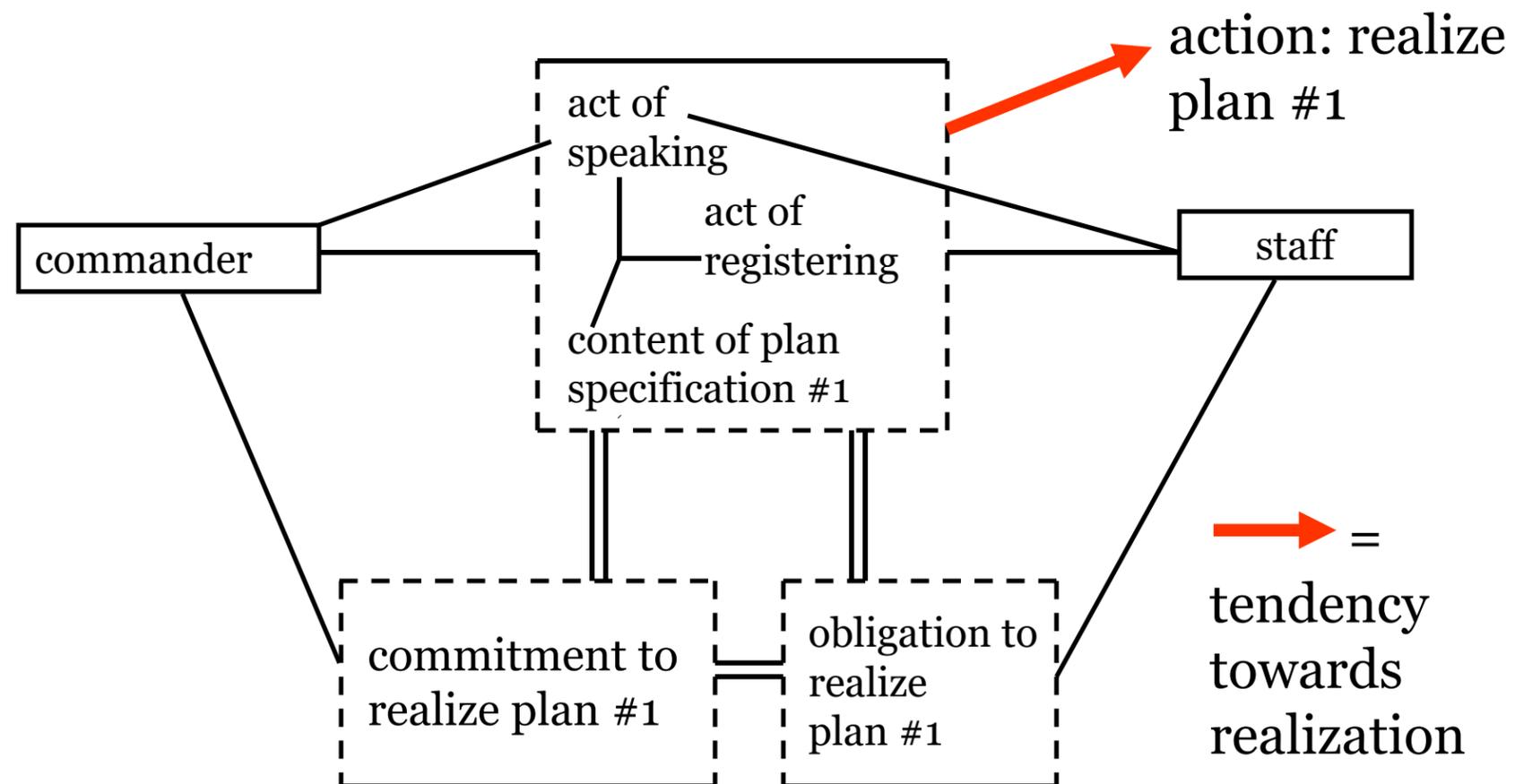
# The Structure of the Promise



# Structure of the Mental Act of Plan Commitment



# Structure of the Speech Act of Plan Commitment



# **Modifications of Social Acts (Searle: felicity conditions)**

Sham promises; lies as sham assertions (cf. a forged signature); rhetorical questions

Social acts performed in someone else's name (representation, delegation)

Social acts with multiple addressees

Conditional social acts

Collective social acts

# **Collective social acts**

Singing in a choir

Conversation

Dancing

Arguing

Religious rituals

Military planning

## **Social media ≠ social acts**

Someone might use Facebook simply as a diary / personal scrapbook.

Someone might use Youtube simply as a videodiary.

# J. L. Austin



## **Austin (1955)**

**‘promising is not something superior, in the same scale as hoping and intending’**

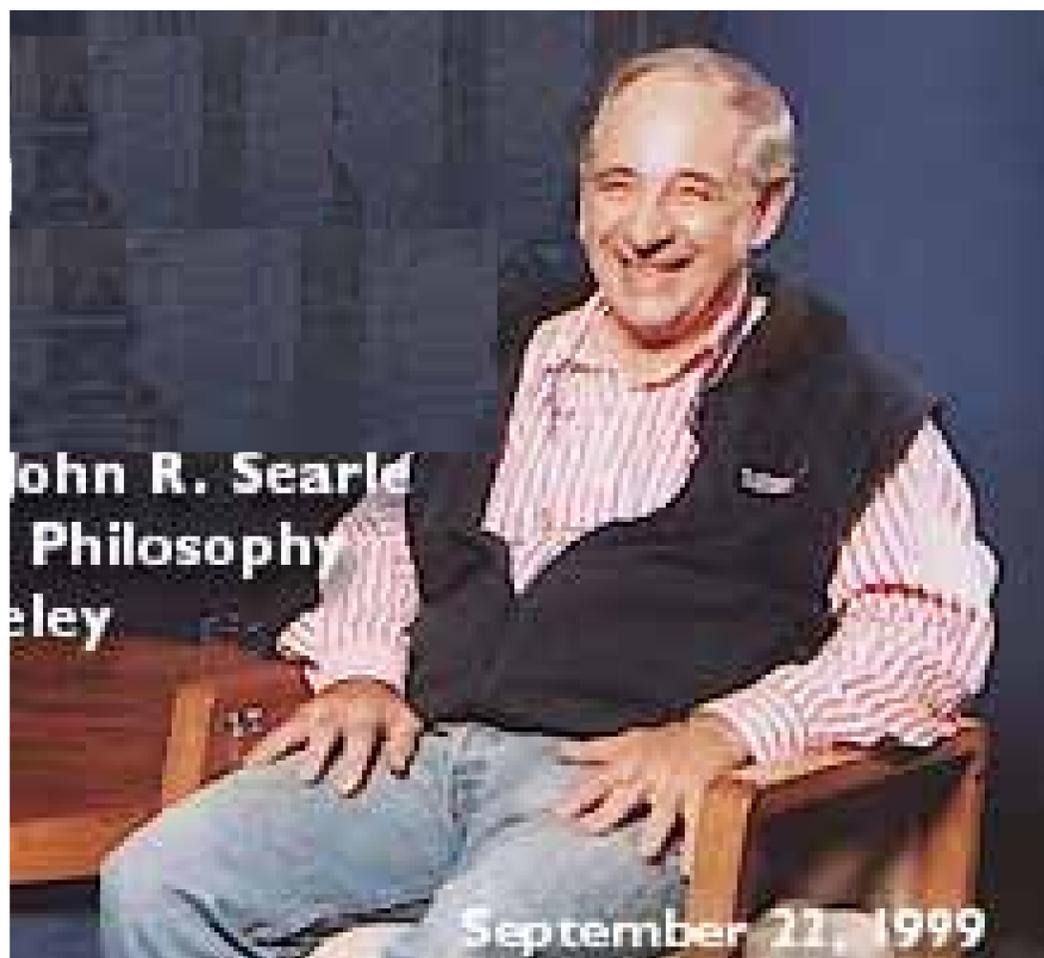
**Rather, when I say ‘I promise’**

**I have not merely announced my intention, but, by using this formula (performing this ritual), I have bound myself to others, and staked my reputation, in a new way.**

# **Austin: the speech act of guaranteeing**

**someone who guarantees and turns out  
to be wrong is “liable to be rounded on  
by others”**

# John R. Searle



# **Searle:**

**Speech acts are acts performed by uttering expressions in accordance with certain constitutive rules**

**When you perform a speech act then you create certain institutional facts**

# Institutional facts

exist because we are able to treat the world and each other in certain, very special (cognitive) ways

Examples of institutions:

money

property

marriage

government

Institutional facts exist because of language use, law and psychology

# Languages are tied to obligations

Core speakers of a language (mothers, school-teachers, dictionary compilers, terminologists ...)  
have

Dispositions

to monitor

to evoke a claim ...

Dispositions *in case of failure to perform*

to blame

to shame

to punish ...

their fellow language users for incorrect uses of  
language (incorrect dialect, incorrect word  
choice, inappropriate utterance ...)

# The competences of which language is comprised

## **1. Intra-Linguistic Dispositions**

- to speak,
- to write,
- to register (hear/read and understand) the content of what is spoken, written
- to respond (in conversations, in response to questions, in response to requests for information)
- to monitor, blame, etc. (see above)

# The competences of which language is comprised

## **2. Dispositions to use language to achieve extra-linguistic benefits**

### ***2a. for oneself***

- to request, beg, command, plead, entreat, claim ...

### ***2b. for another***

- to promise, oblige oneself, contract, waive a claim ...

## Extra-linguistic realizables whose existence is triggered by uses of language

1. as when an act of promising triggers the beginning to exist of
  - the disposition on the side of the promissor to act in such a way as to fulfil the content of the promise
  - the obligation to fulfil the content of the promise
  - the disposition on the side of the promisee to monitor fulfilment (and subsequently to blame, shame, malign, sue, etc.)
2. as when an act of waiving a claim triggers the ceasing to exist of
  - the disposition to realize the corresponding obligation
  - this obligation itself

# How is this possible? How can mere speaking create dispositions?

Because language *is* a set of dispositions inhering in a society (a linguistic community).

The institutions of promising, contracting, blaming, suing, etc. are themselves dispositions inhering in a society.

A large and representative fraction of members of the *society* bears dispositions to (for instance) monitor, and to blame and shame those who do not keep their promises, to expect and respect such blaming and shaming, to expect and respect that others will expect and respect such blaming and shaming.

# Ontology needs to take care of deontic entities

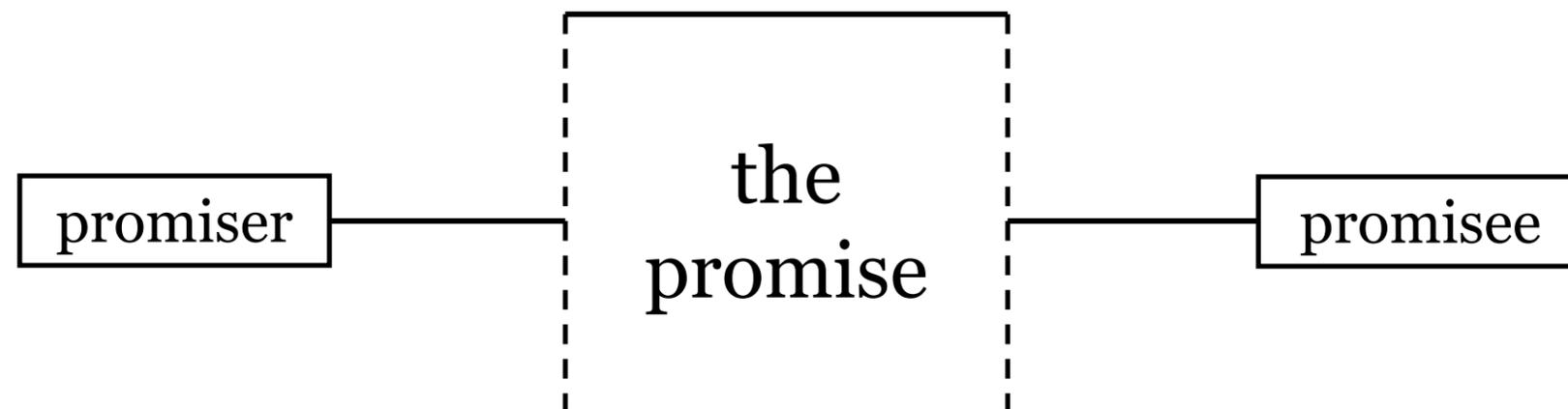
Ontological approach via social dispositions  
(customs, languages, practices, institutions, ...)

- Ontology of acts
  - mental acts
  - physical acts
    - Ontology of social acts
      - Ontology of speech acts
        - Ontology of document acts

# What is an obligation?

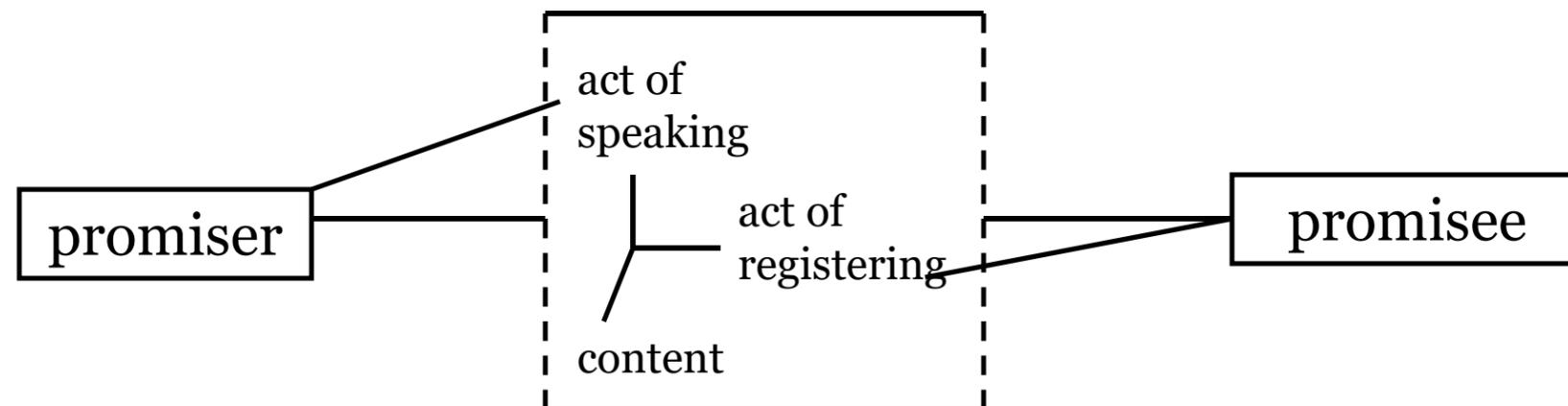
- Ontology of acts
  - mental acts
  - physical acts
    - Ontology of social acts
      - Ontology of speech acts
        - Ontology of document acts

# Towards obligation



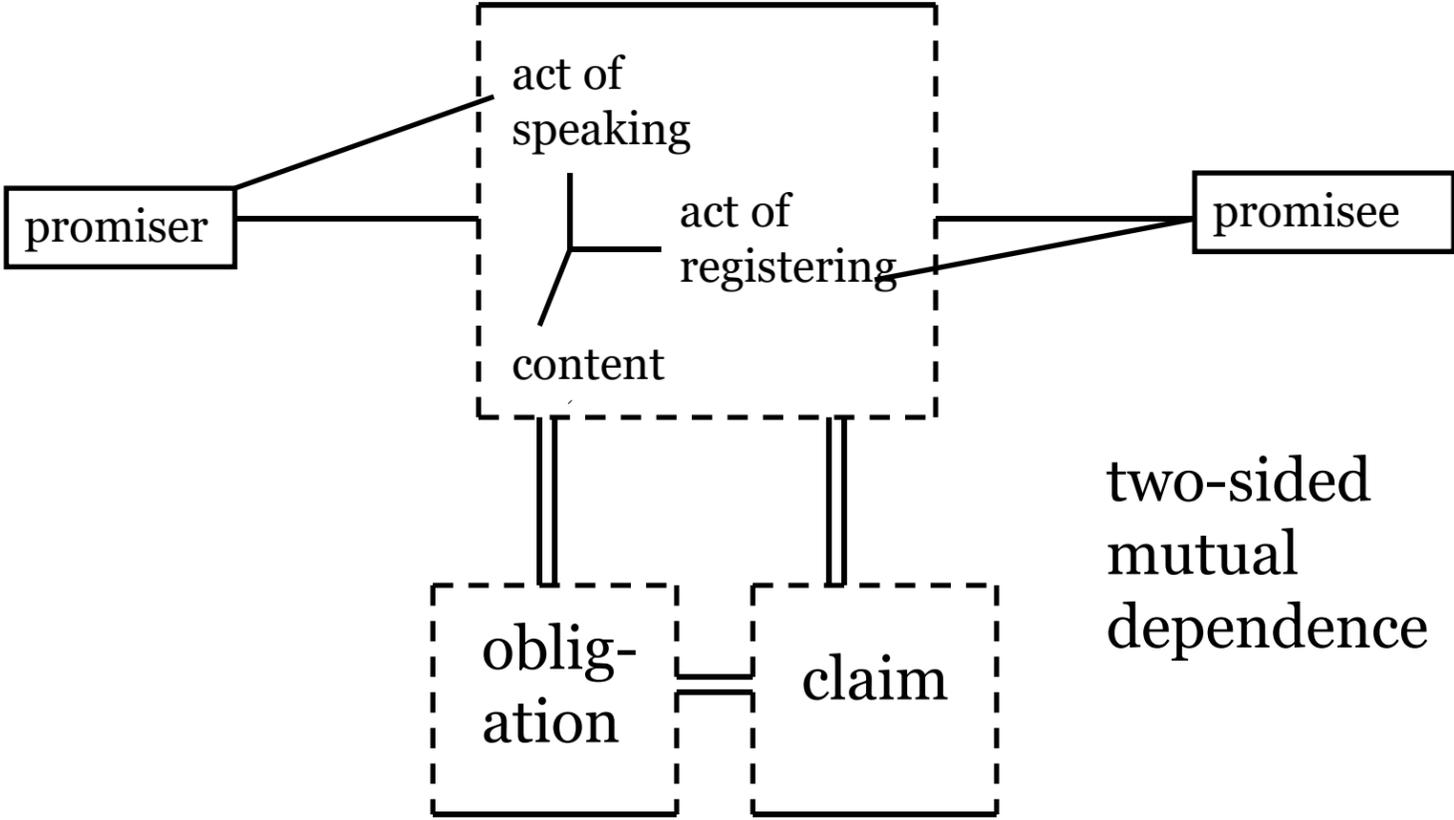
relations of one-sided  
dependence

# The Structure of the Promise

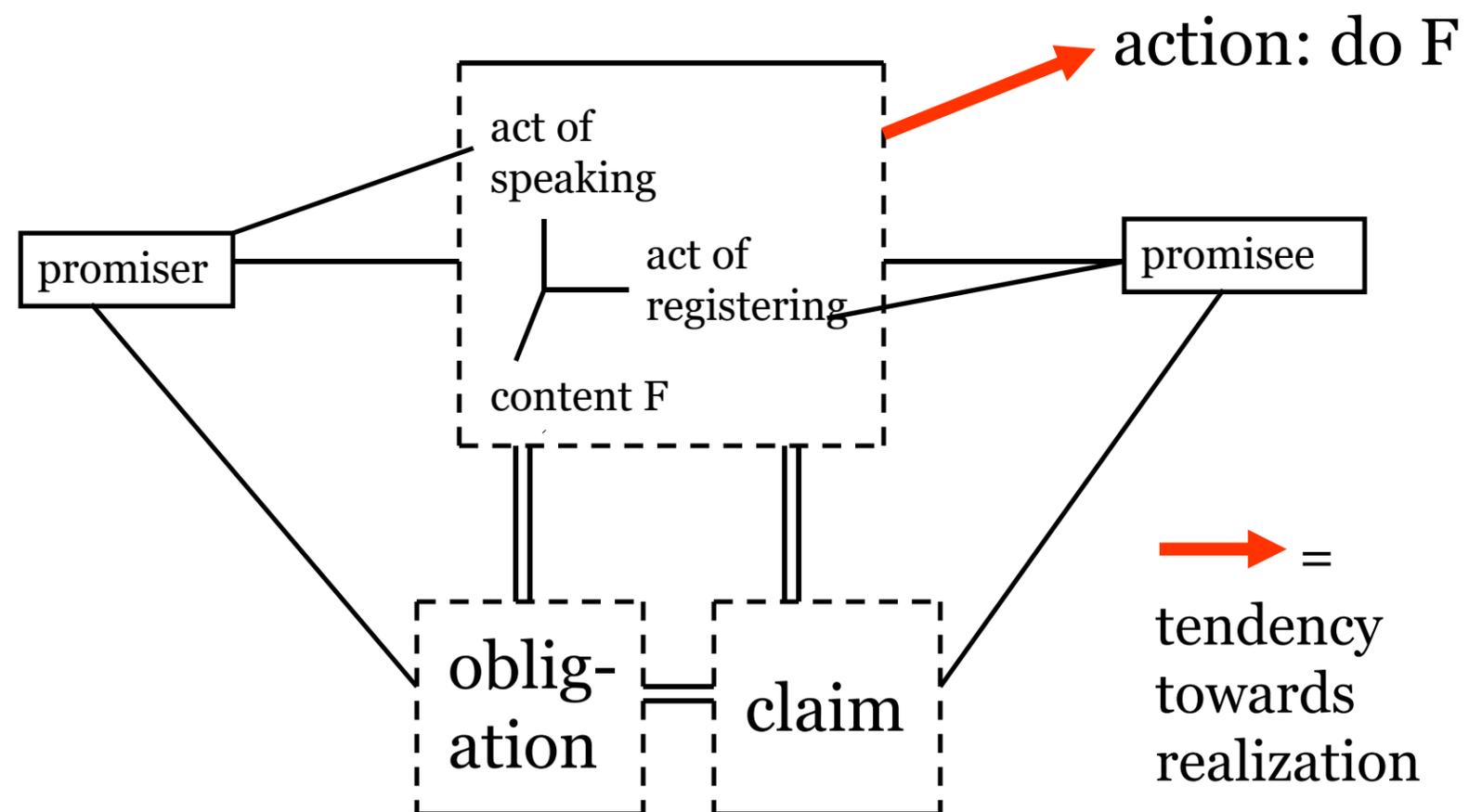


three-sided mutual  
dependence

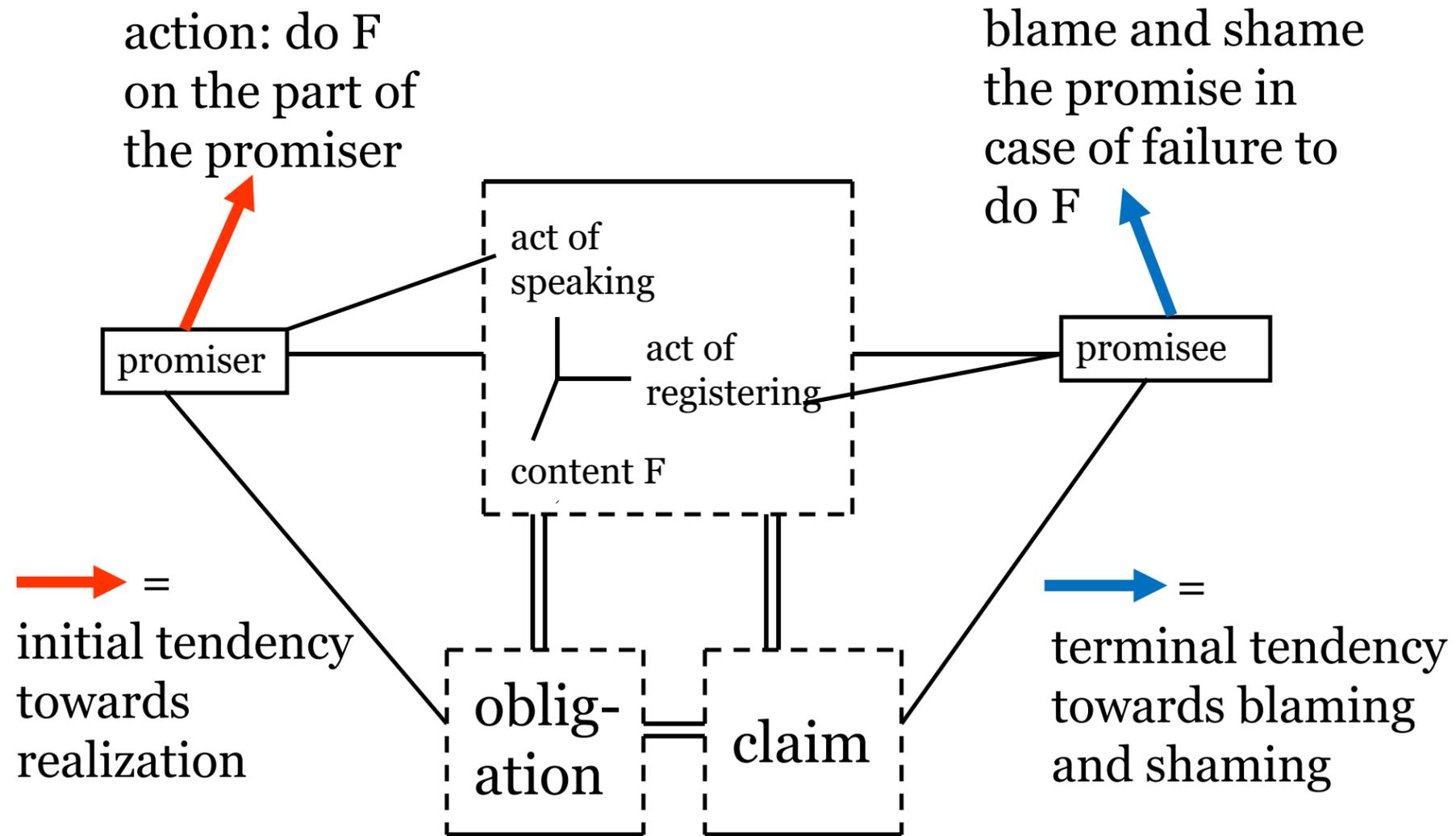
The semi-ritualized event of speaking we call a promise gives rise to mutually correlated (states of) claim and obligation



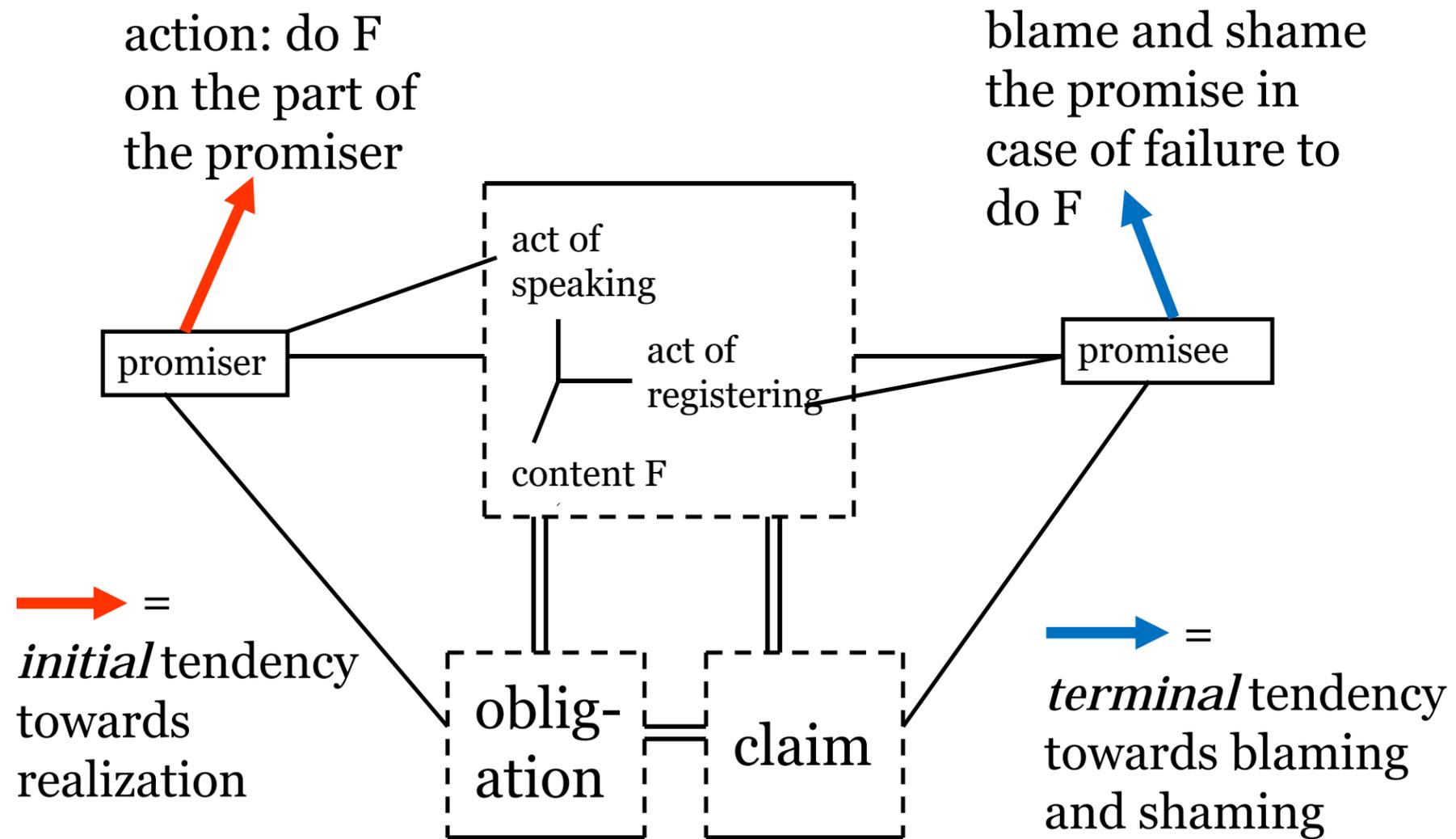
# The Structure of the Promise



# Enhanced view 1



# Enhanced view 2



# Enhanced view 3

