

Problem Space

1

Nature of Geo-Collaboration

- spatially distributed
- interaction with geographical space

Needs for coordination

- distributed
- inter-dependent

Challenges in coordination

- high complexity
- high contingency
- spatially dependent

Overall objective
Motivate

This Research

Overall framework

- dependency based
- coordination by awareness
- event driven

Q1: Spatial dependencies

- types
- implications
- lifecycle

Q2: Event notification

- strategies
- comparison

Q3: Event interpretation

- cognitive process
- visual aids

Design & Development

- dependency model
- event notification
- visualization

Existing knowledge
Ground

Knowledge Space

2

Theories

- coordination and dependencies
- awareness
- spatial behavior

Models

- activity models
- dependency models
- spatial models

Methods

- awareness mechanisms
- event processing
- geo-visualization techniques

Methodologies

- knowledge acquisition
- scenario-based design
- design evaluation methods

Theories and models

- spatial dependencies

Methods

- dependency-based event notification
- visual support for event interpretation

New knowledge
Contribute

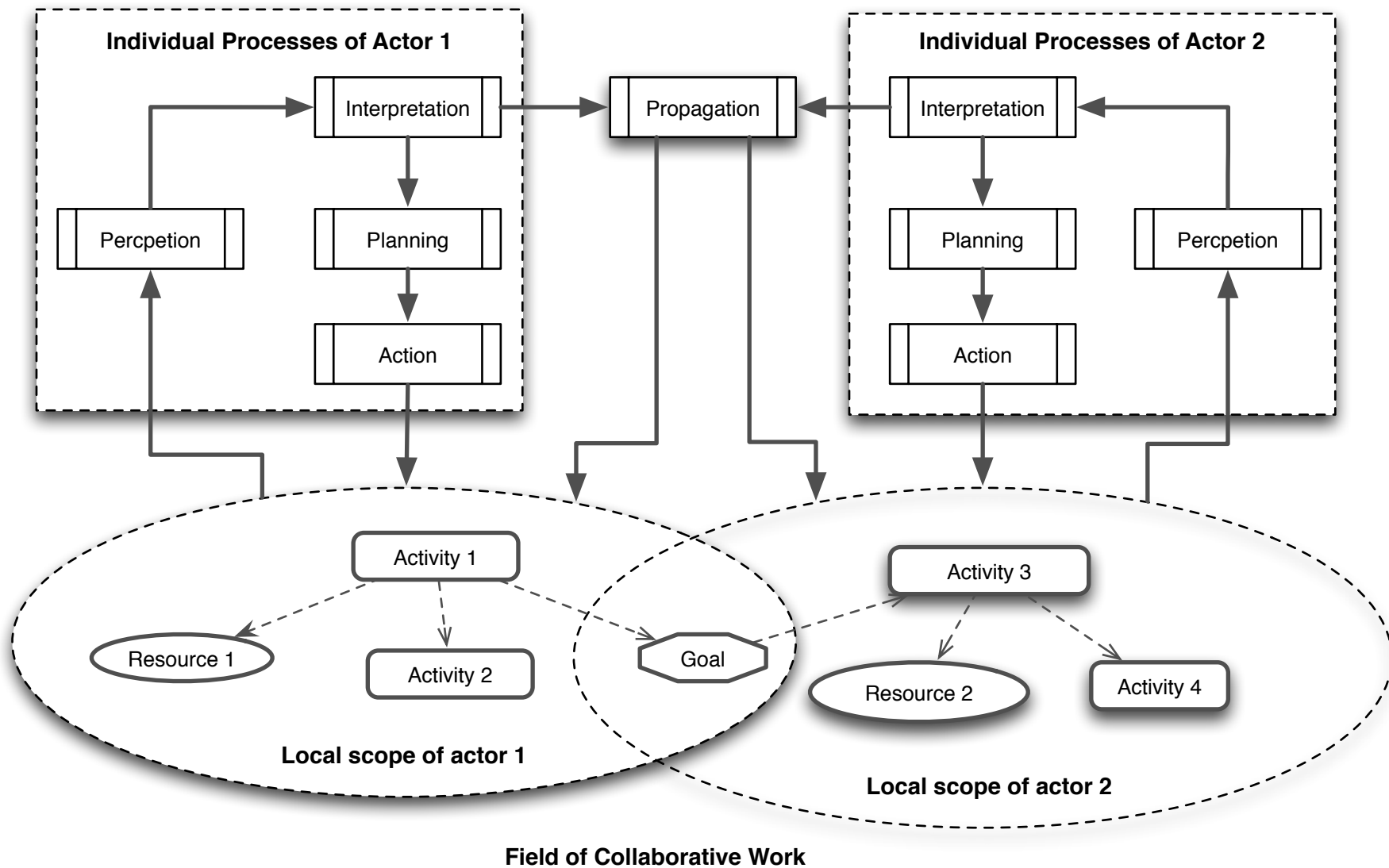
Application

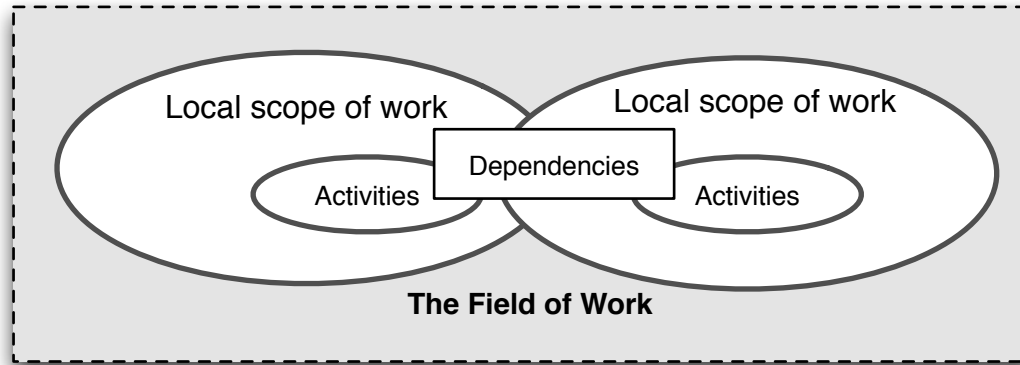
Contribute

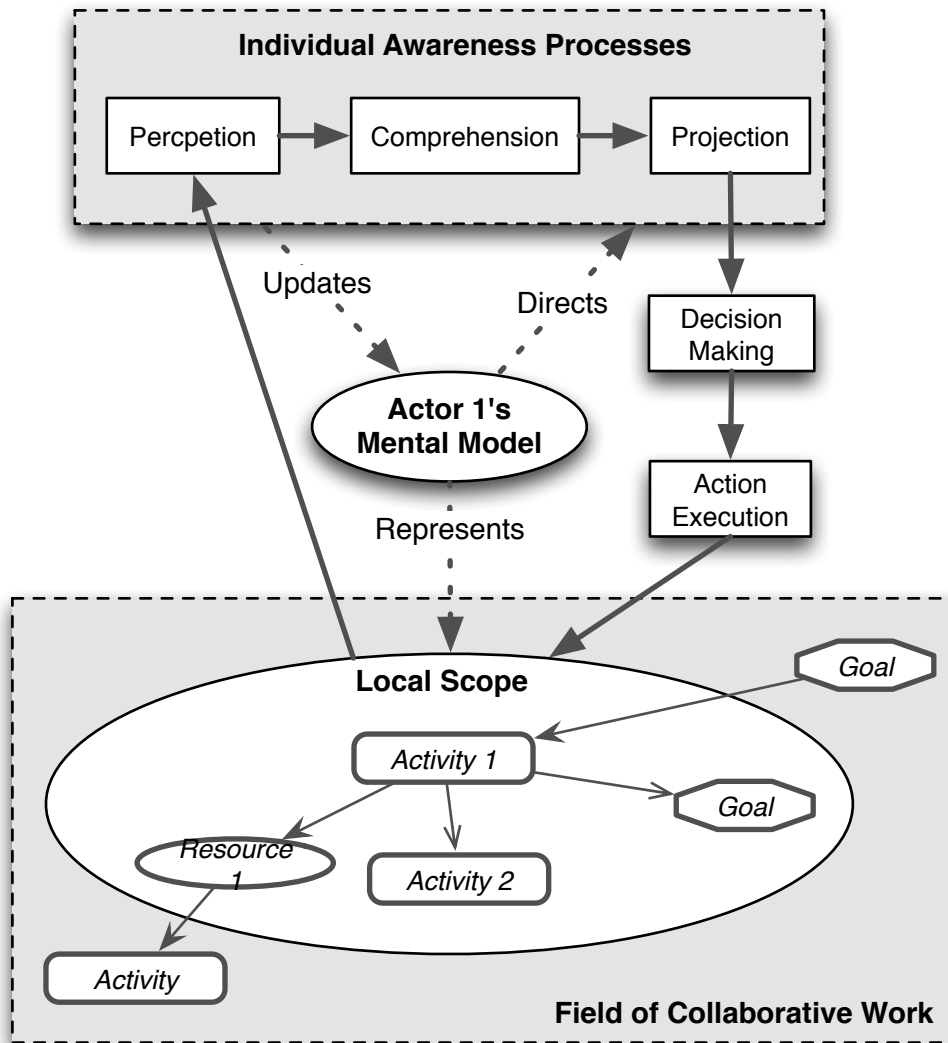
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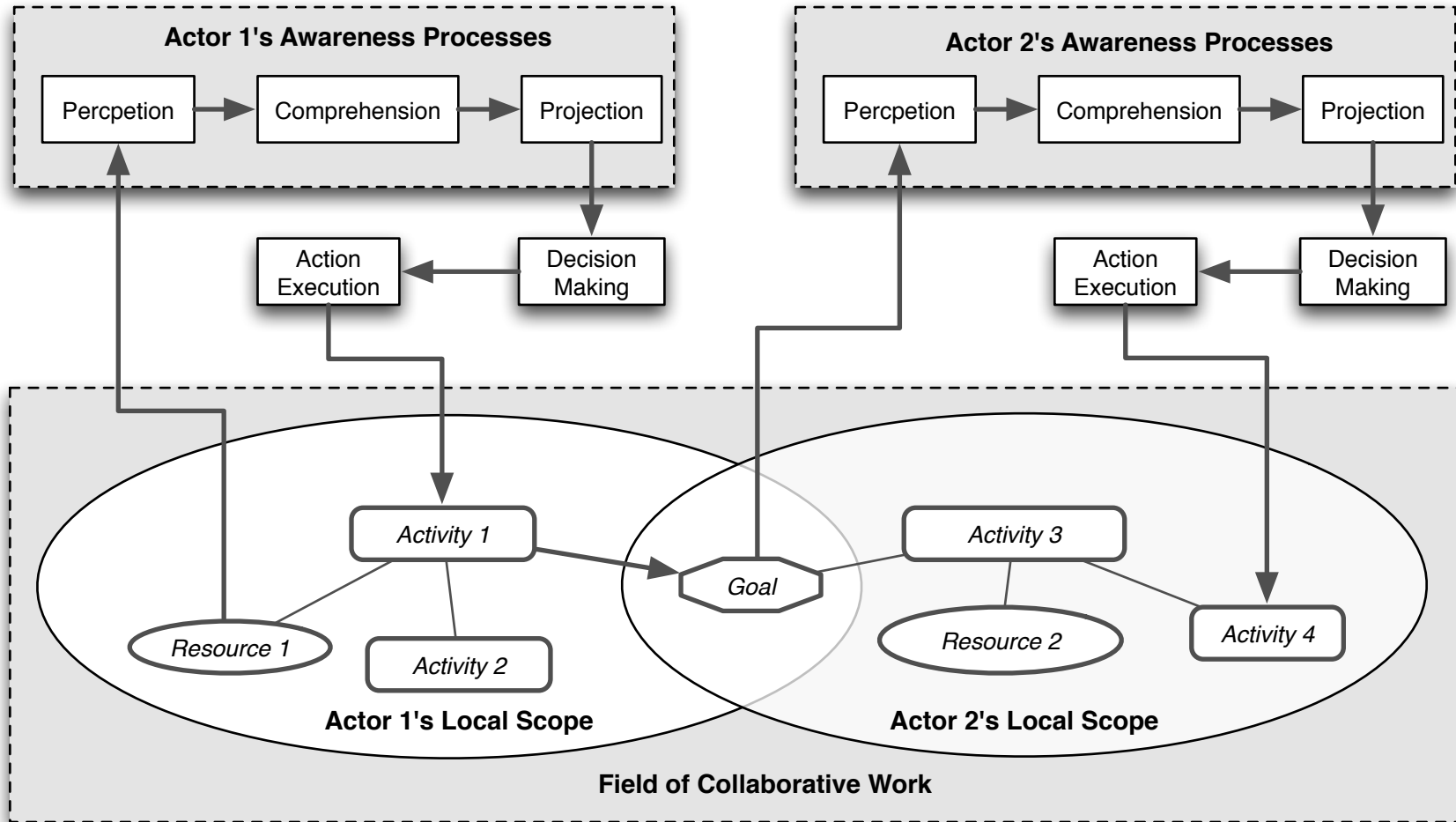
Applicable scenarios

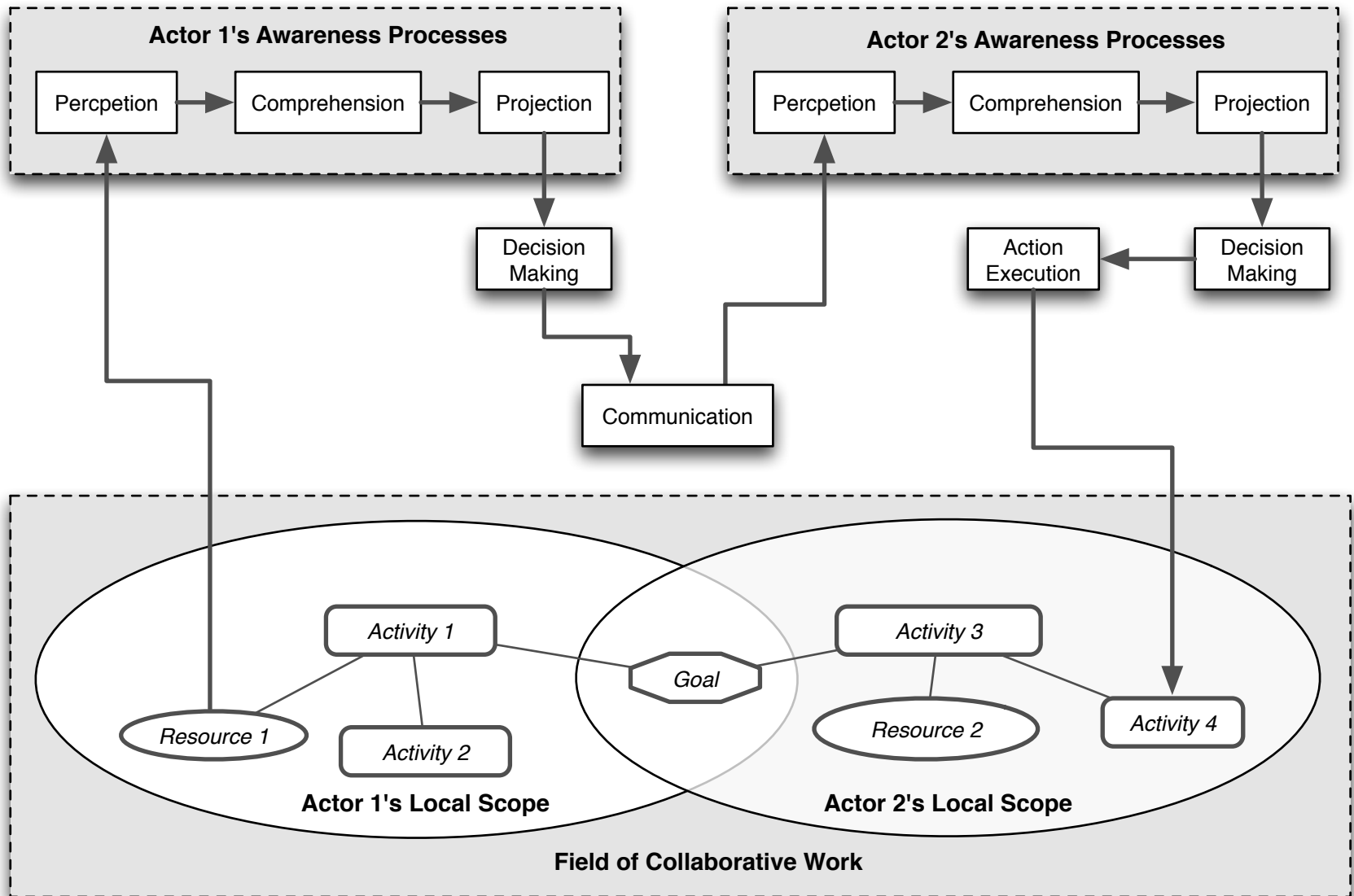
- emergency response
- transportation management
- others?

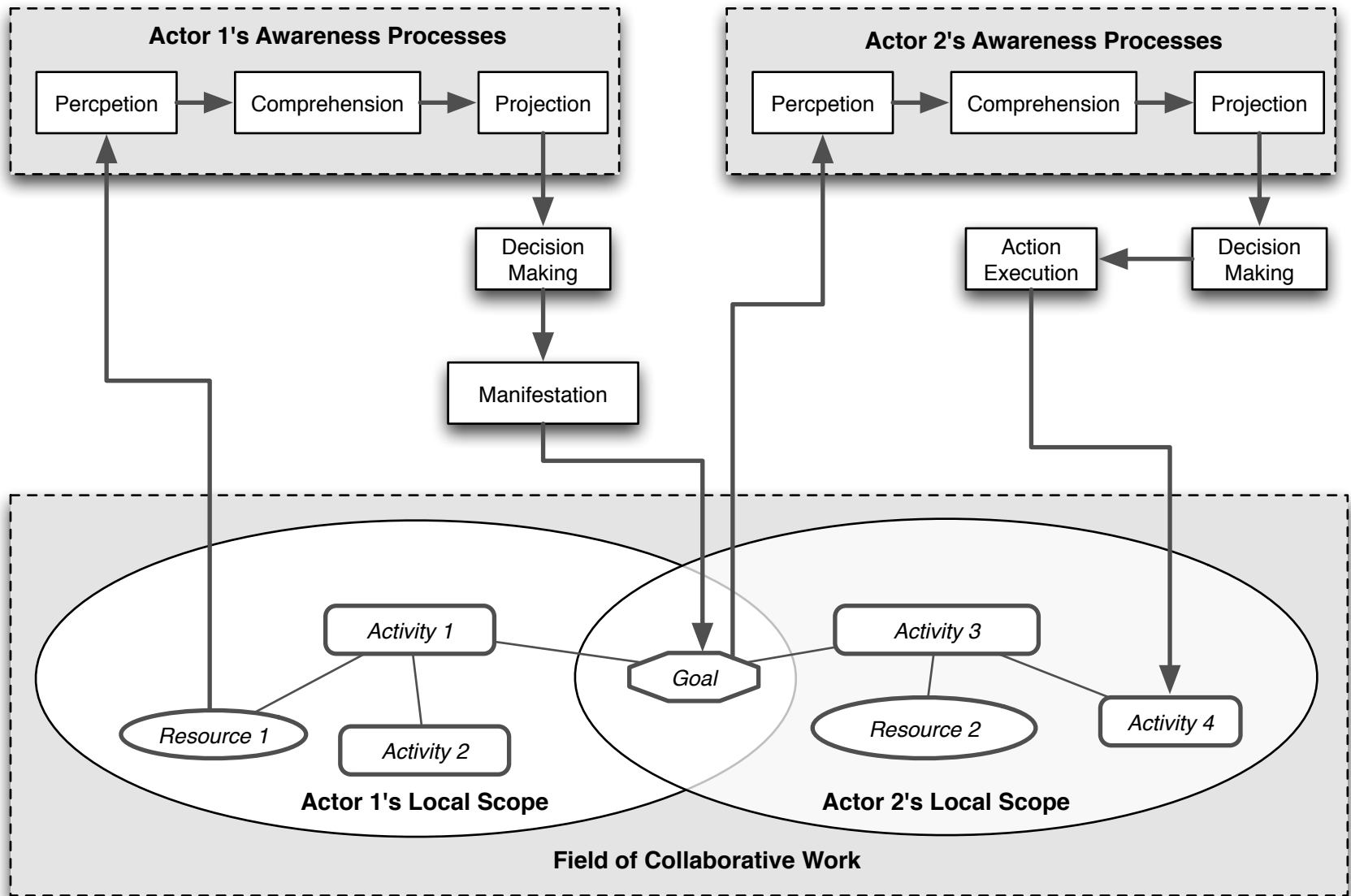


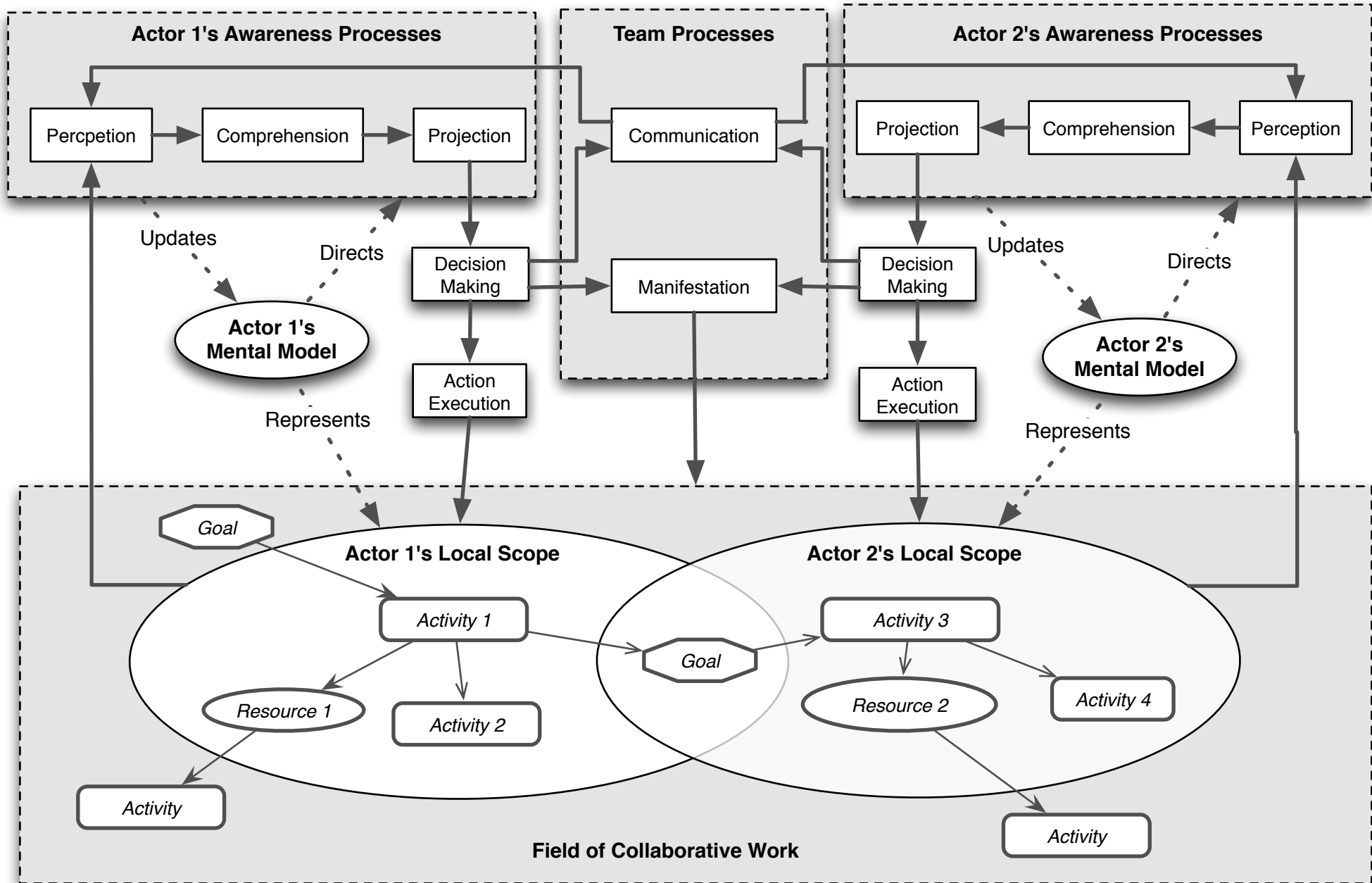


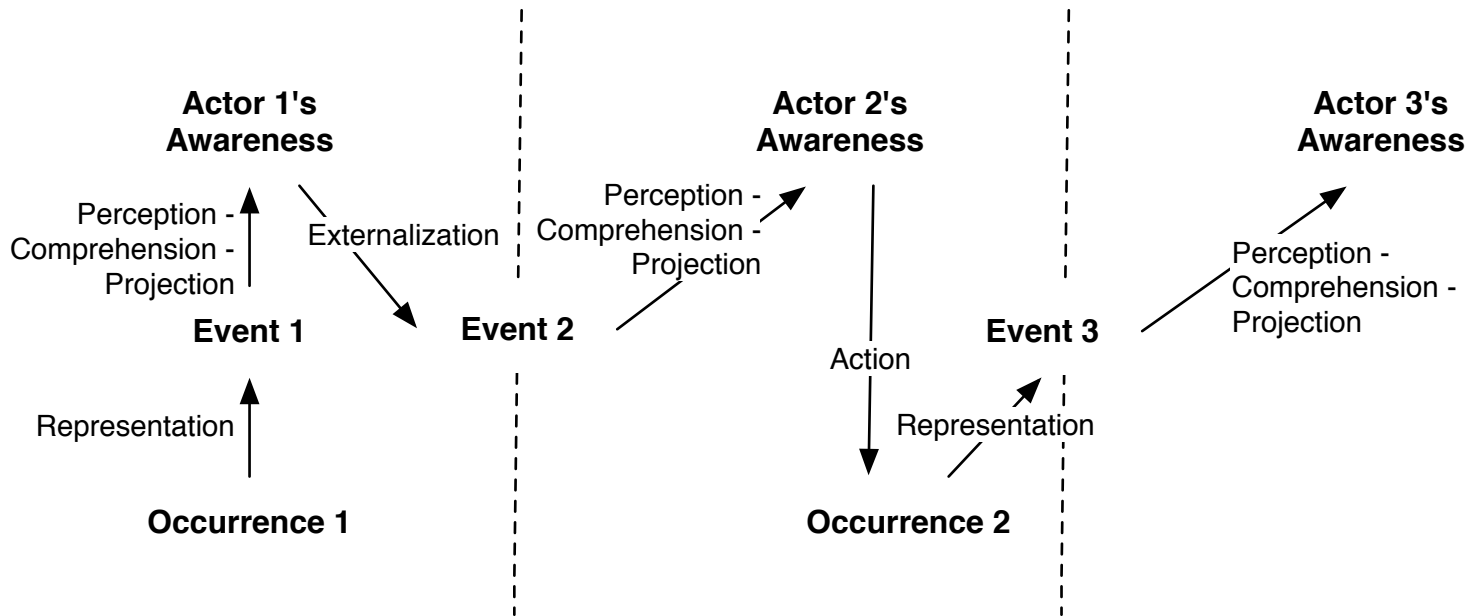
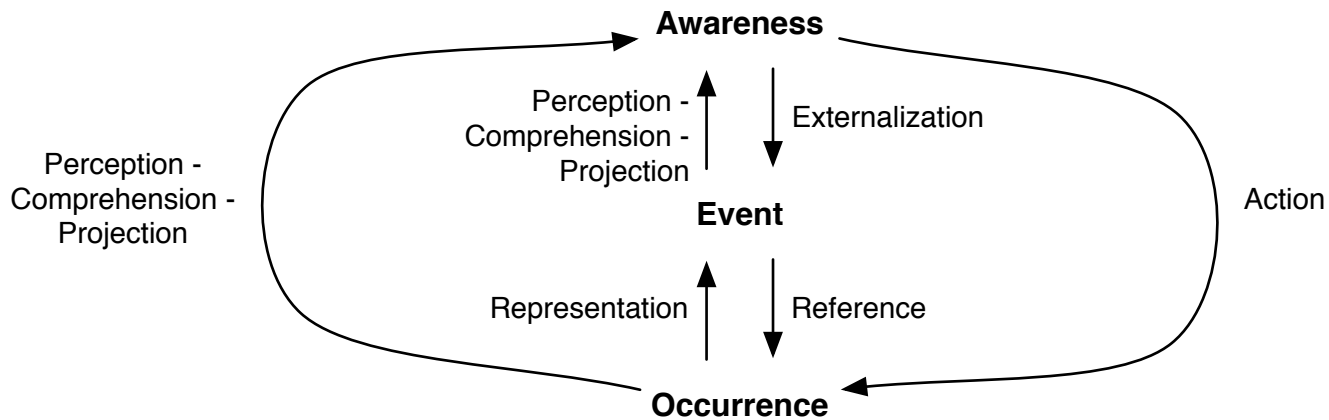


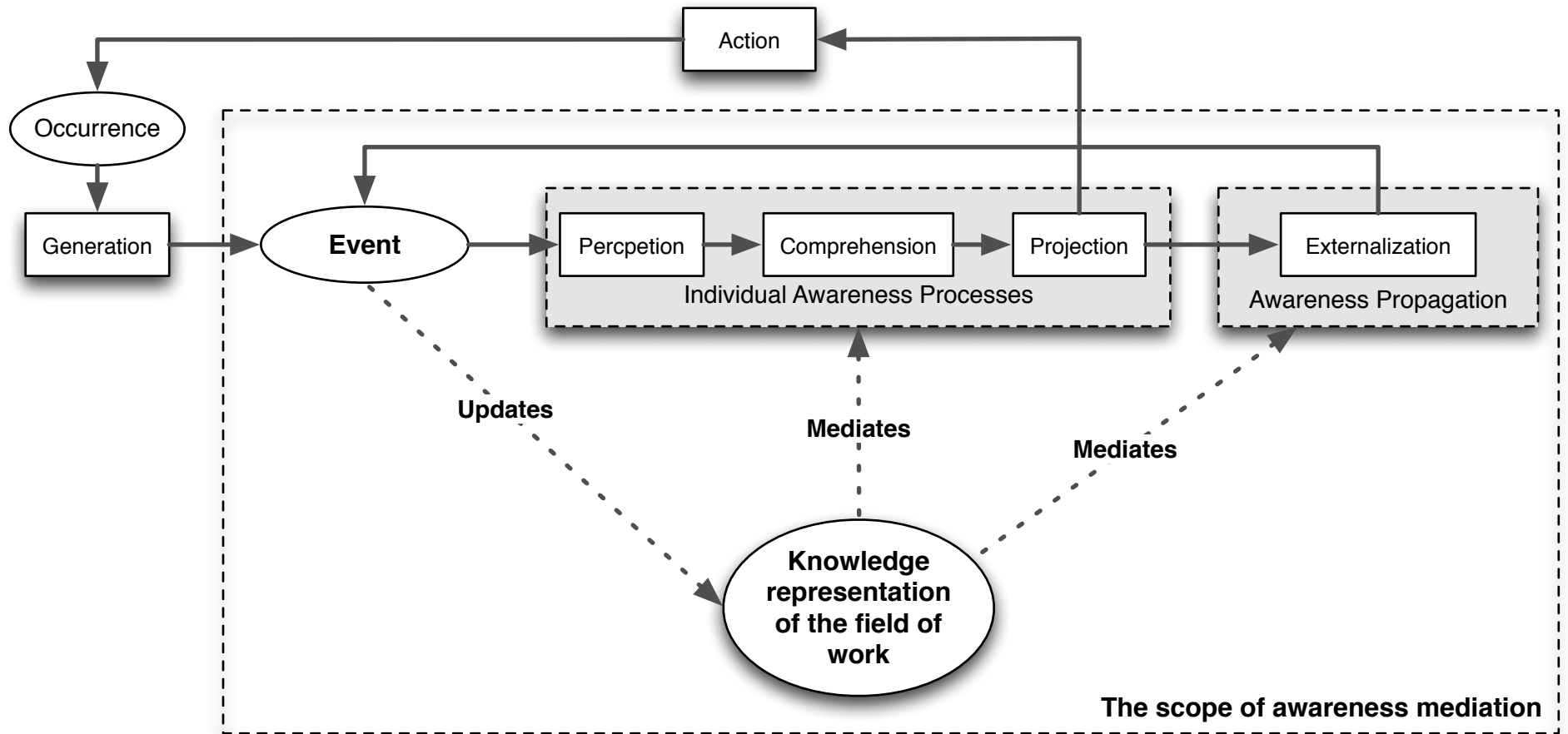


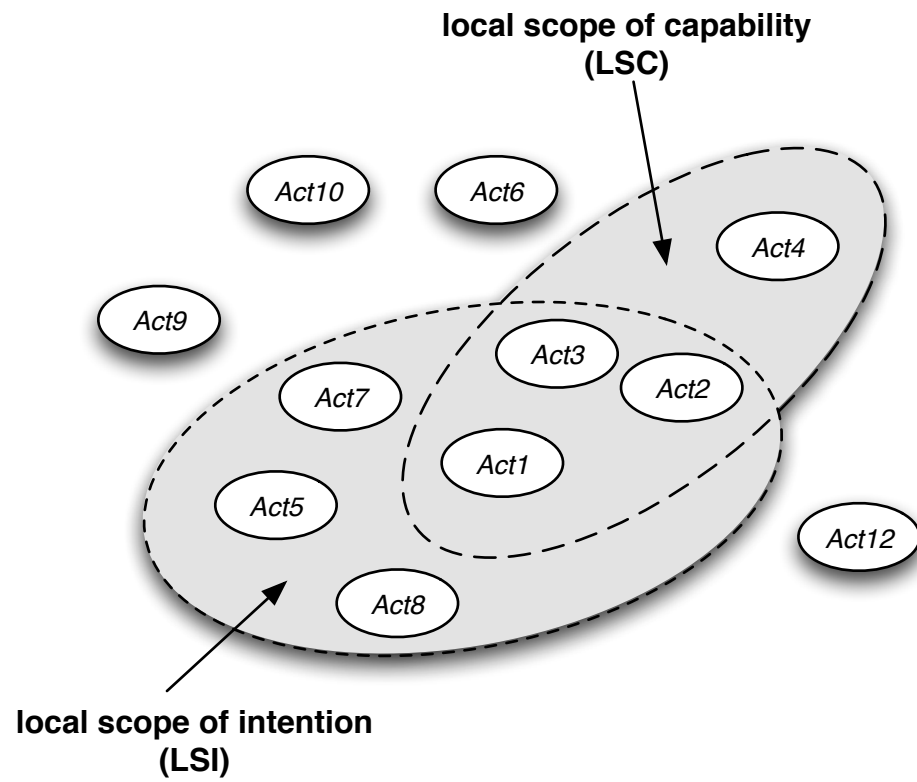


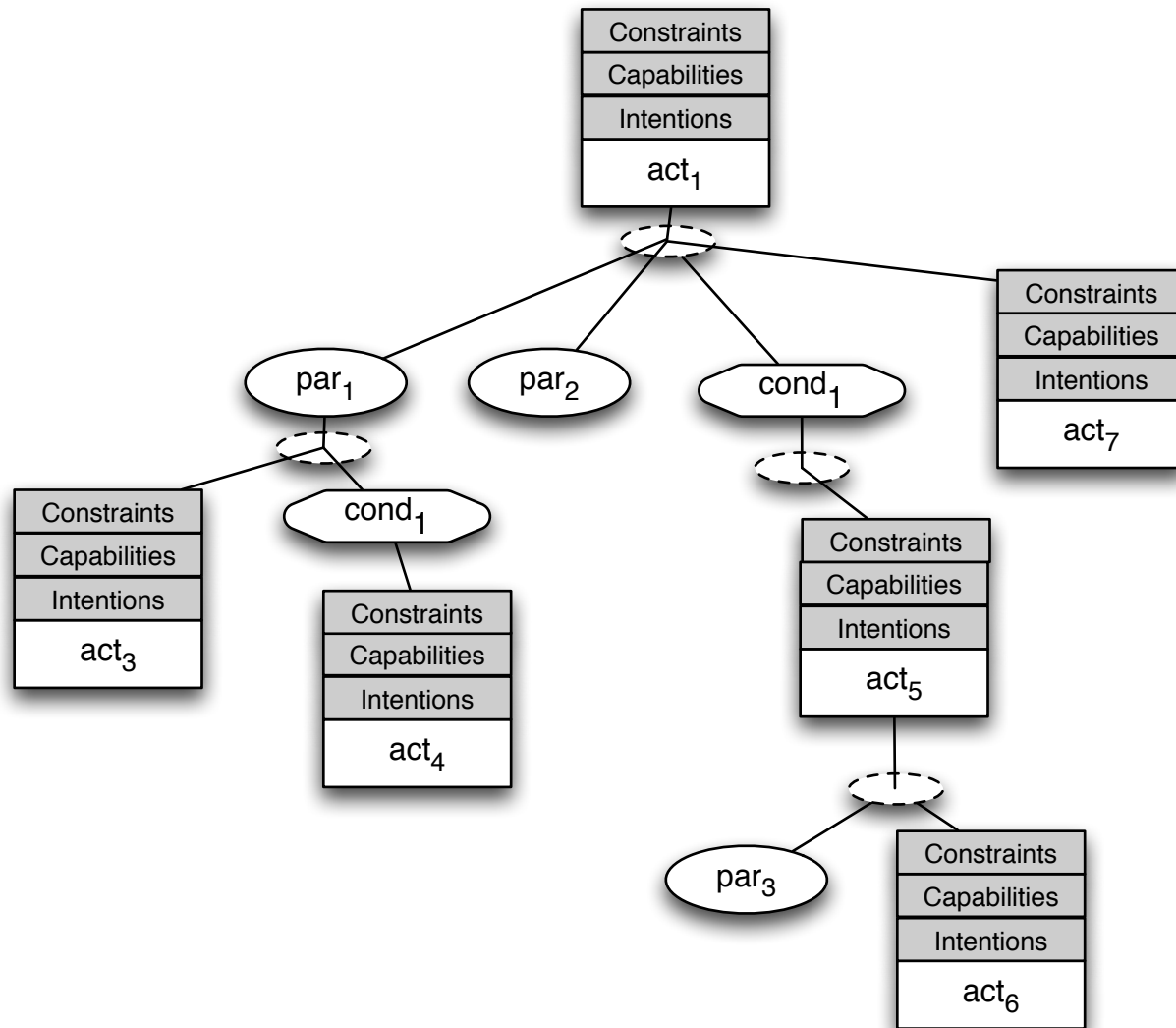


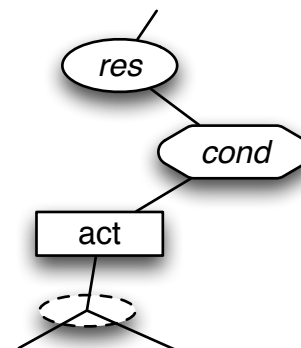
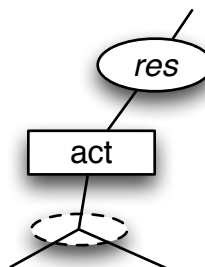
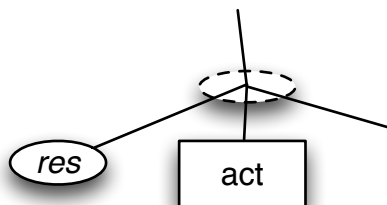
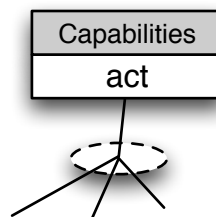
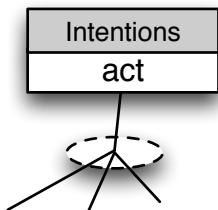
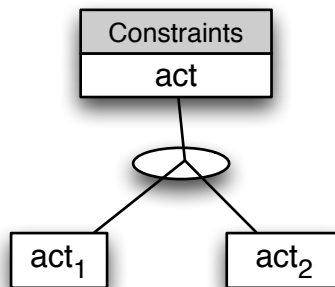
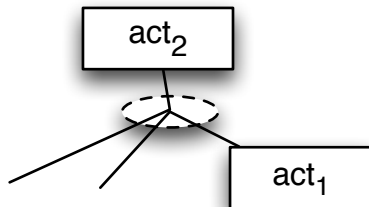


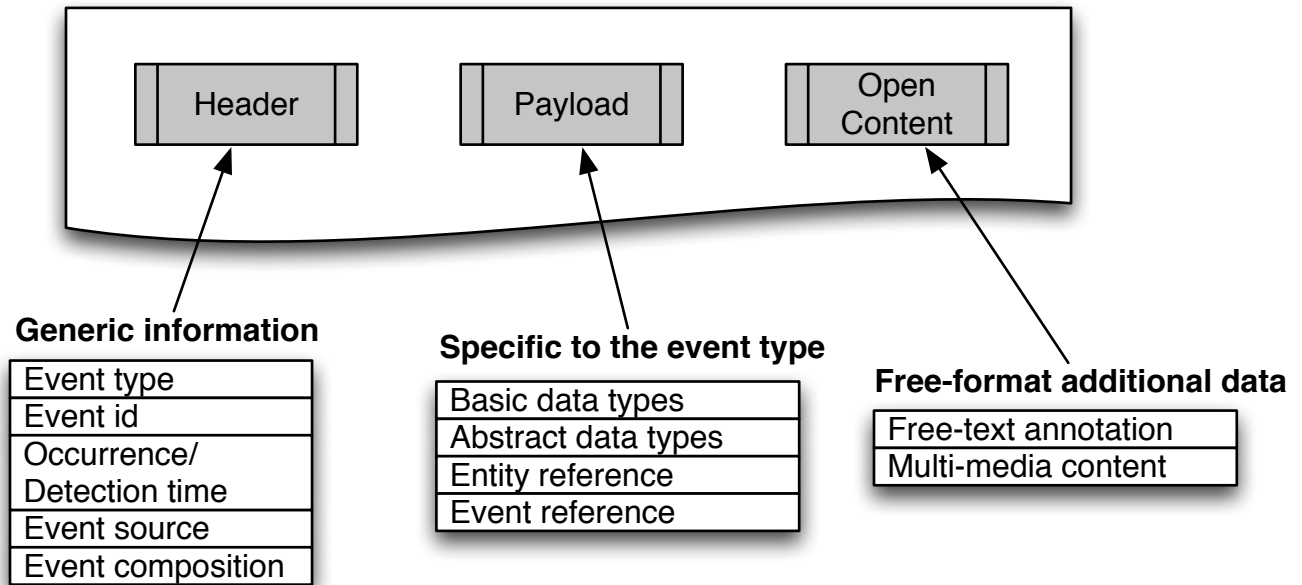


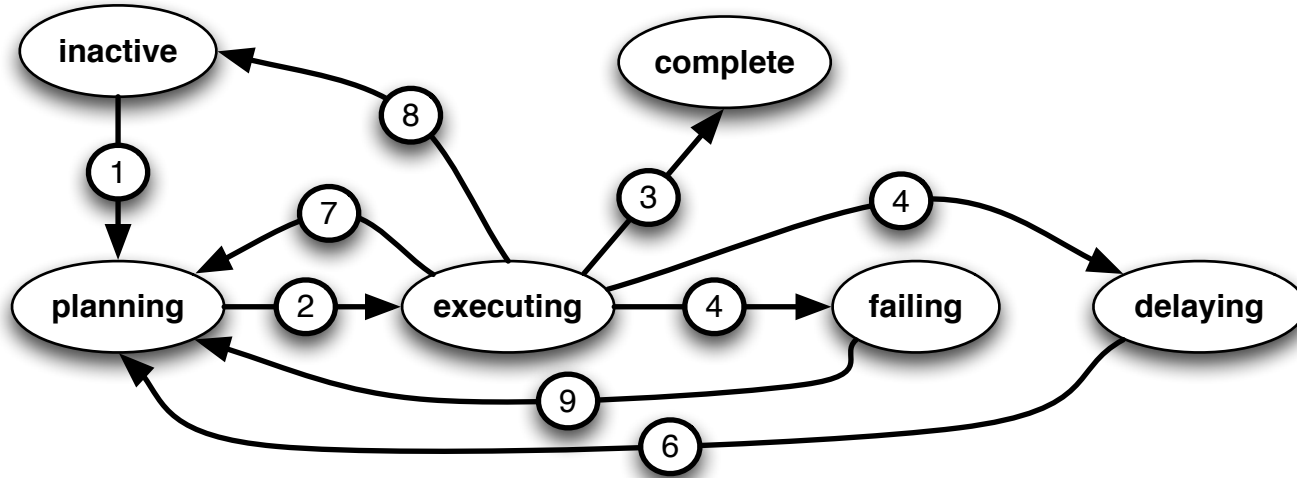












External Event

Entity Event

Relation Event

State Change

Value Comparison

Existential Change over Time

Existential Change over Space

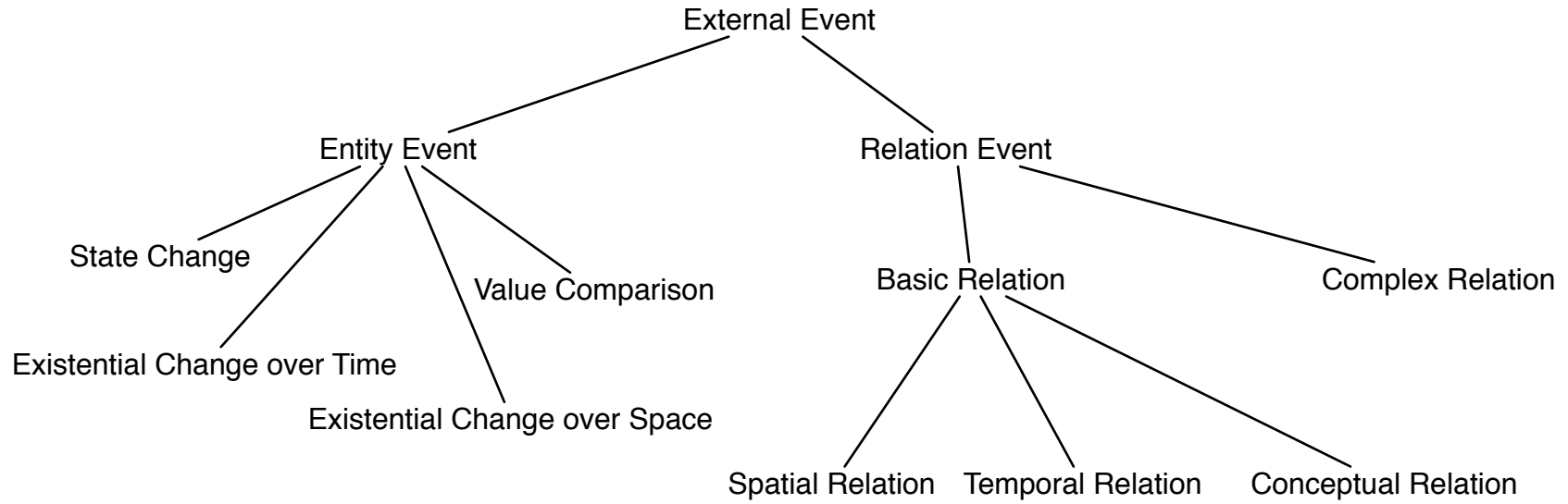
Basic Relation

Complex Relation

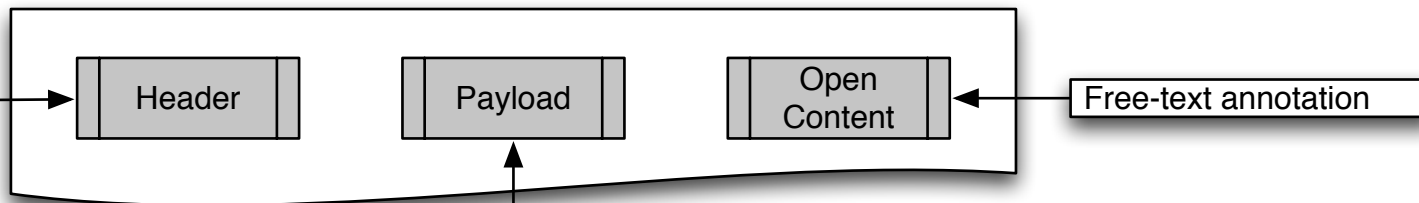
Spatial Relation

Temporal Relation

Conceptual Relation



Event type:
intention

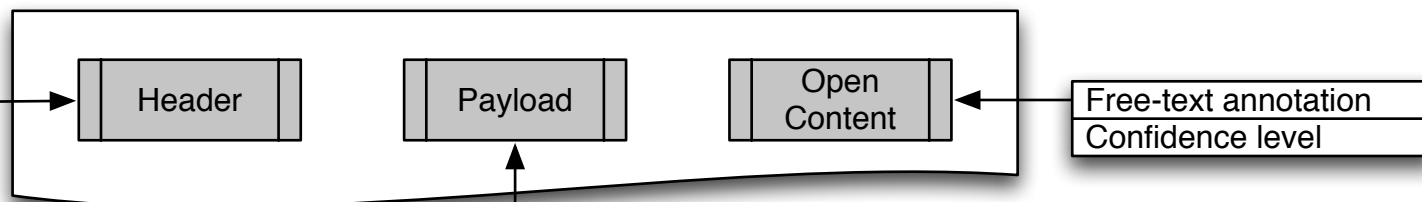


Intention Type:
(Pot.Int, Int.Th, Int.To)
Reference to the actor
Reference to the action

Actor entity

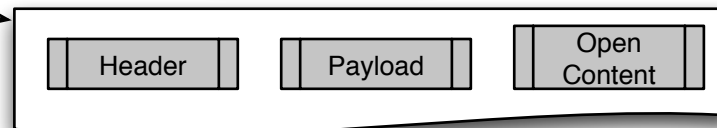
Action entity

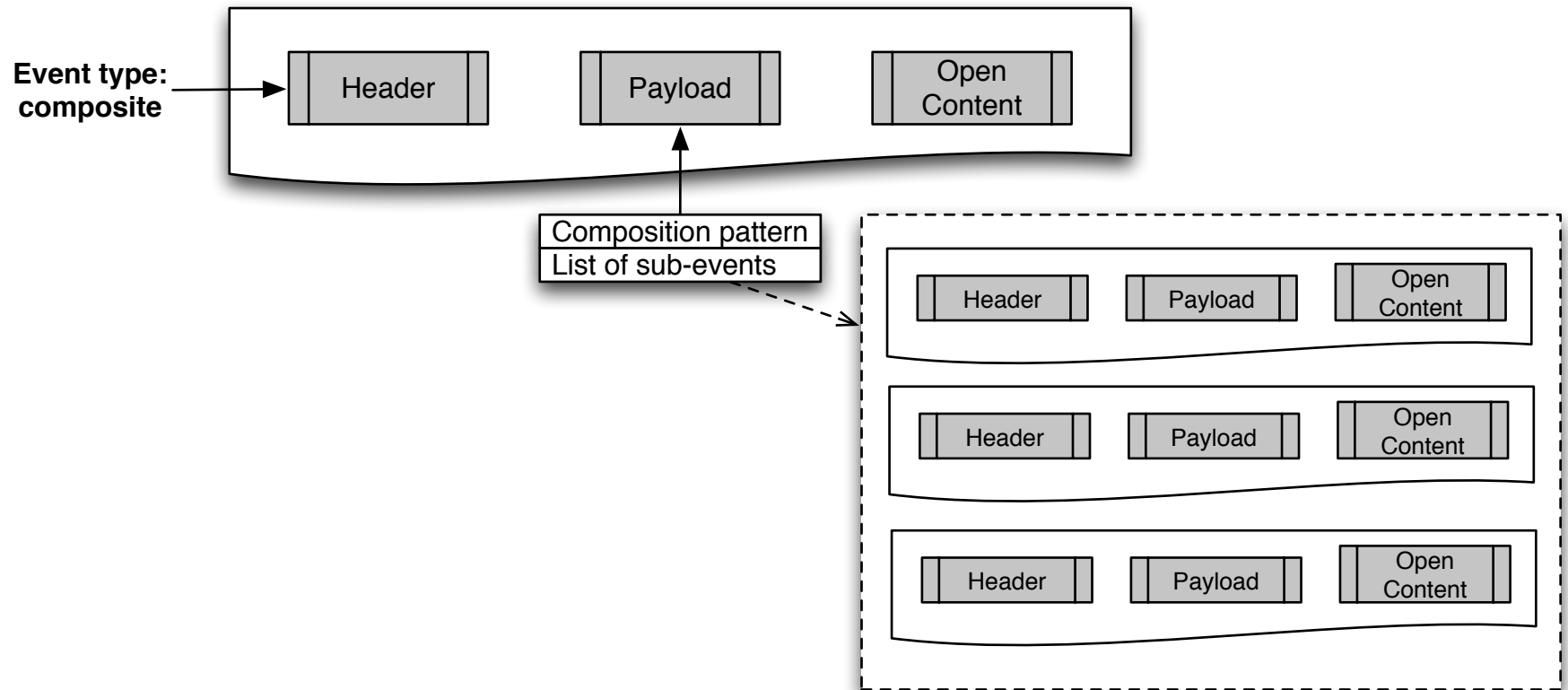
Event type:
belief

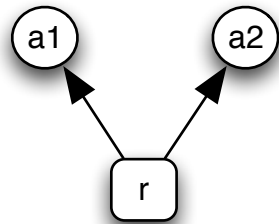


Reference to the actor
Reference to the event

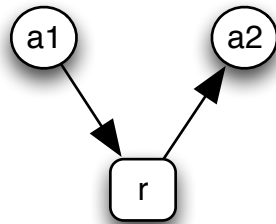
Actor entity



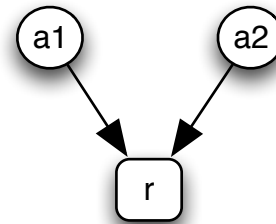




Shared Resource



**Producer/
Consumer**



Common Object

Actions

Resrouces

