

# Multiplicity of Representation in SBOL 2.0



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COMBINE 2015, Oct. 13<sup>th</sup>

# Generality vs. Exchangeability

**AS SOON AS THERE IS  
LANGUAGE,  
GENERALITY HAS  
ENTERED THE SCEN.**

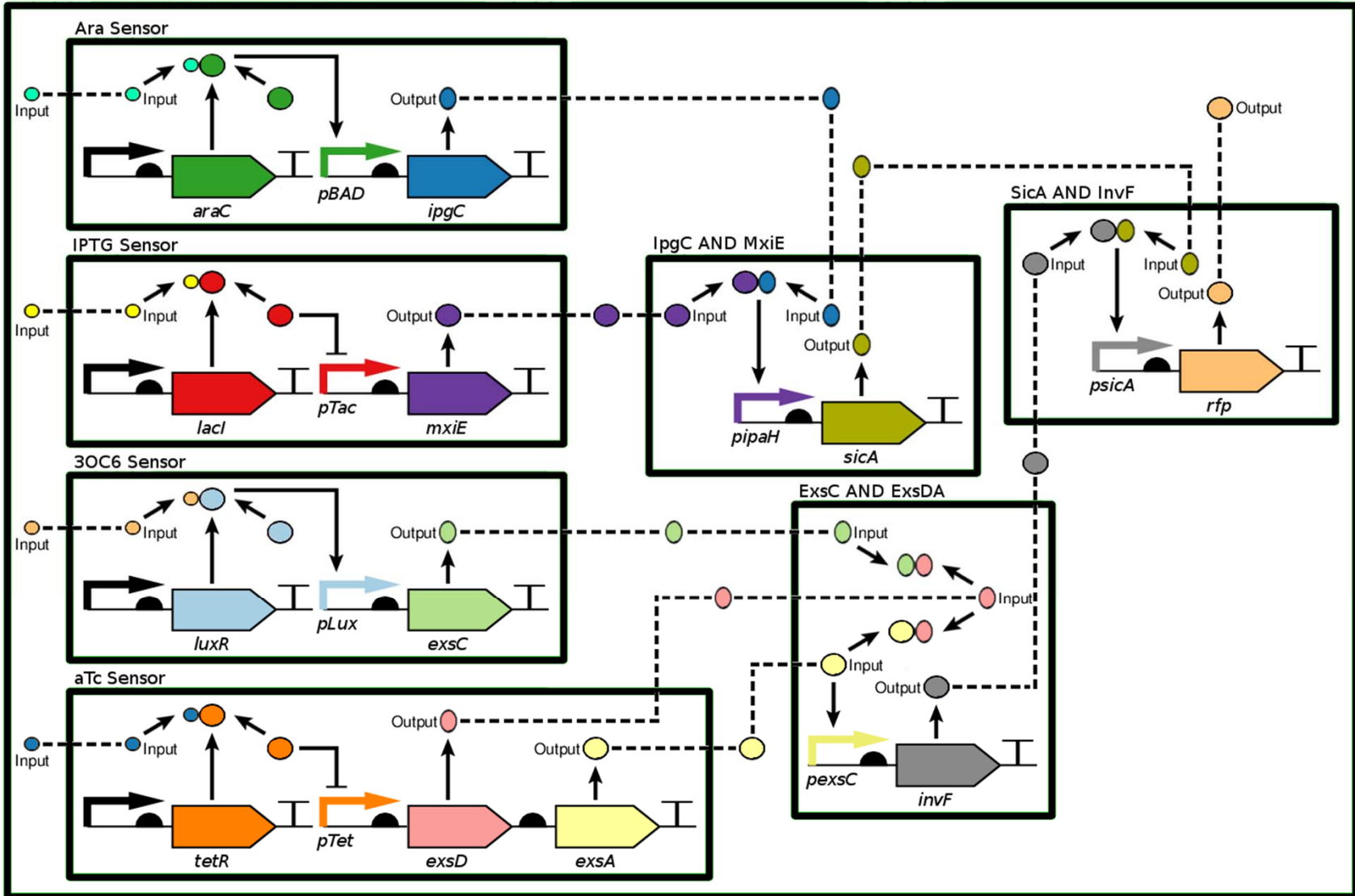
QUOTEHD.COM

Jacques Derrida  
French Philosopher



# IWBDA 2015 Demo

Ara AND IPTG AND 3OC6 AND aTc Sensor

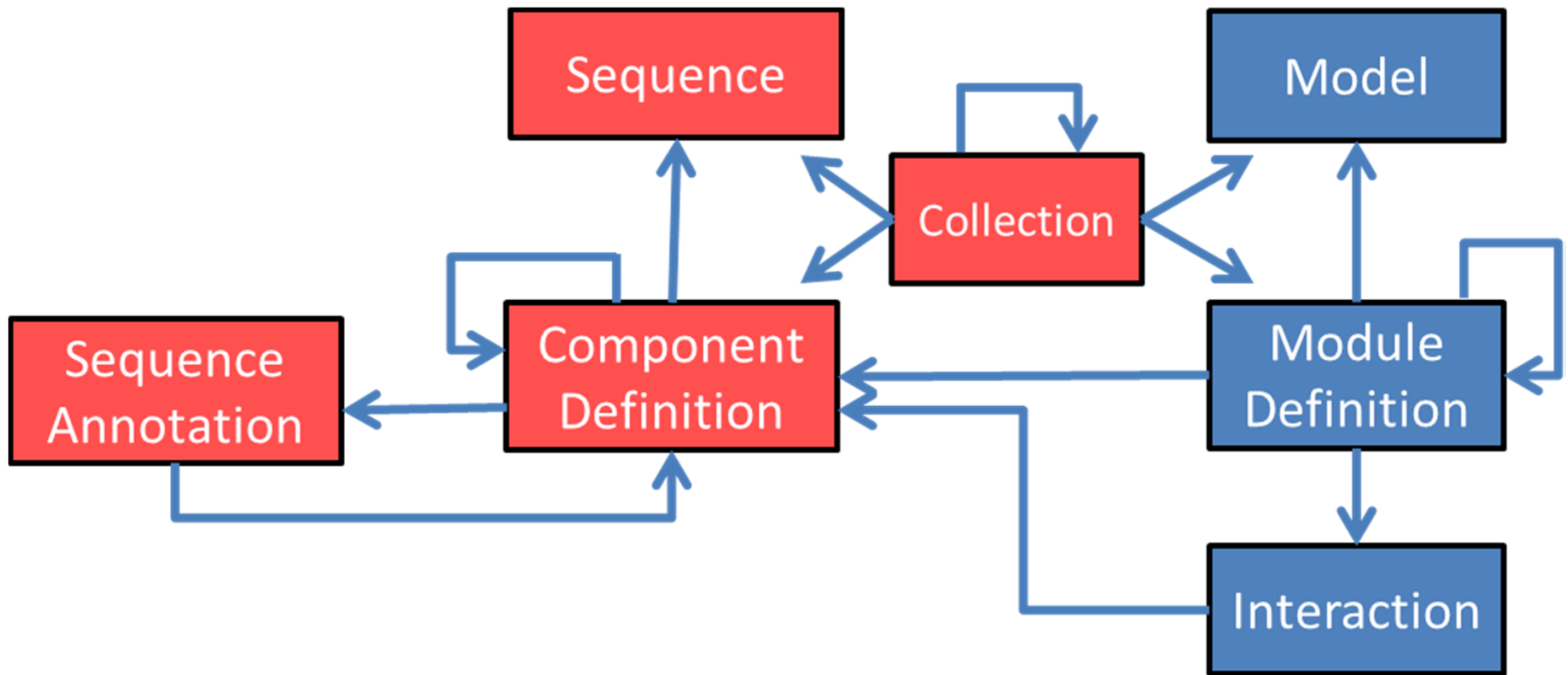


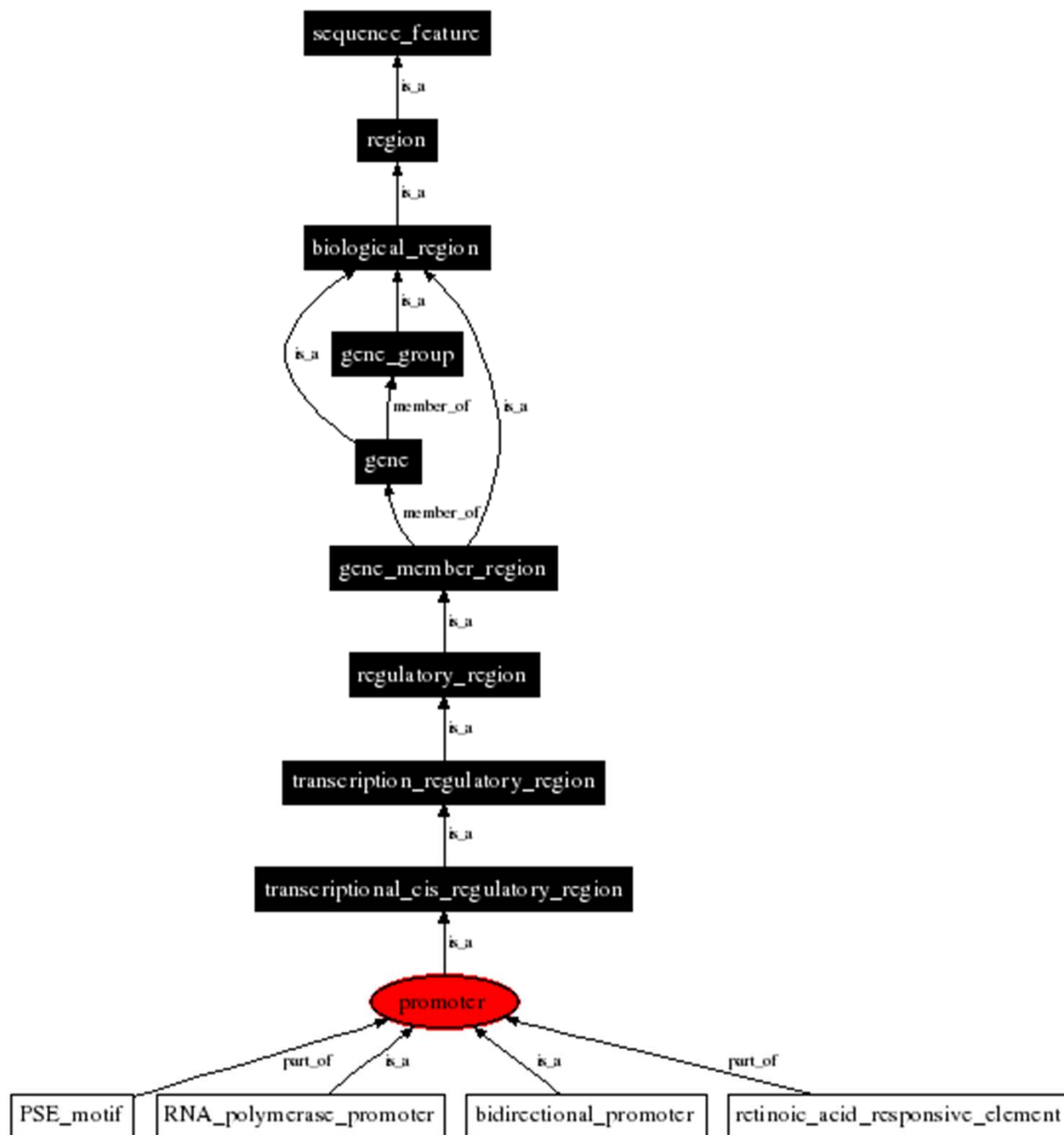
Moon, T. S., Lou, C., Tamsir, A., Stanton, B. C., and Voigt, C. A. (2012) Genetic programs constructed from layered logic gates in single cells. *Nature* 491, 249-253.

# Multiplicities of Representation

## 1. Ontology Terms

# Basic SBOL 2.0 Data Model





# Possible Strategies for Handling Multiplicity of Ontology Terms

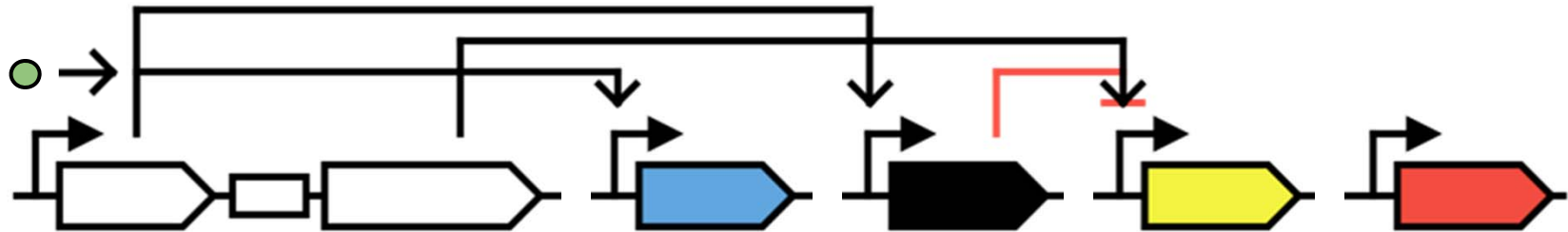
1. Best Practices
2. Ontology Tools

# Multiplicities of Representation

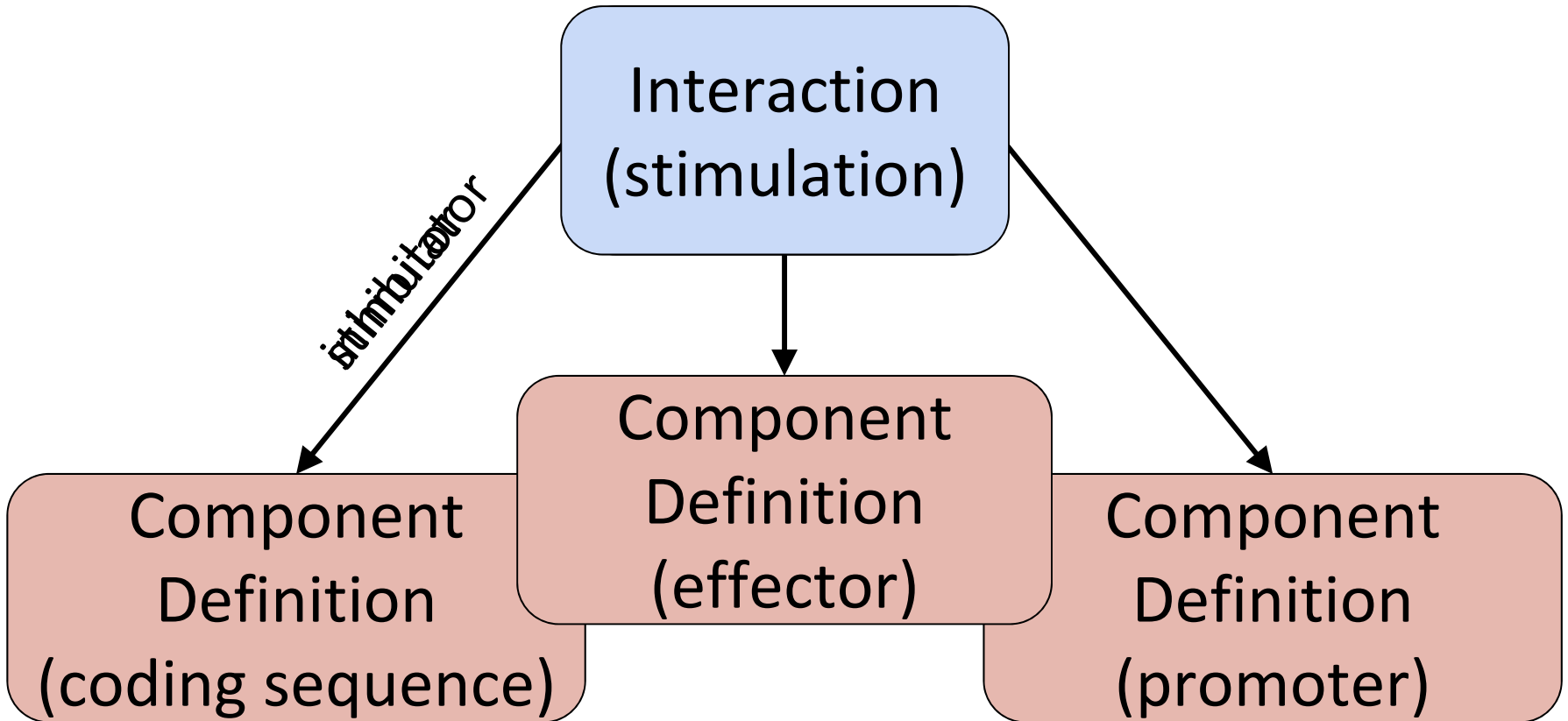
1. Ontology Terms
2. Abstraction

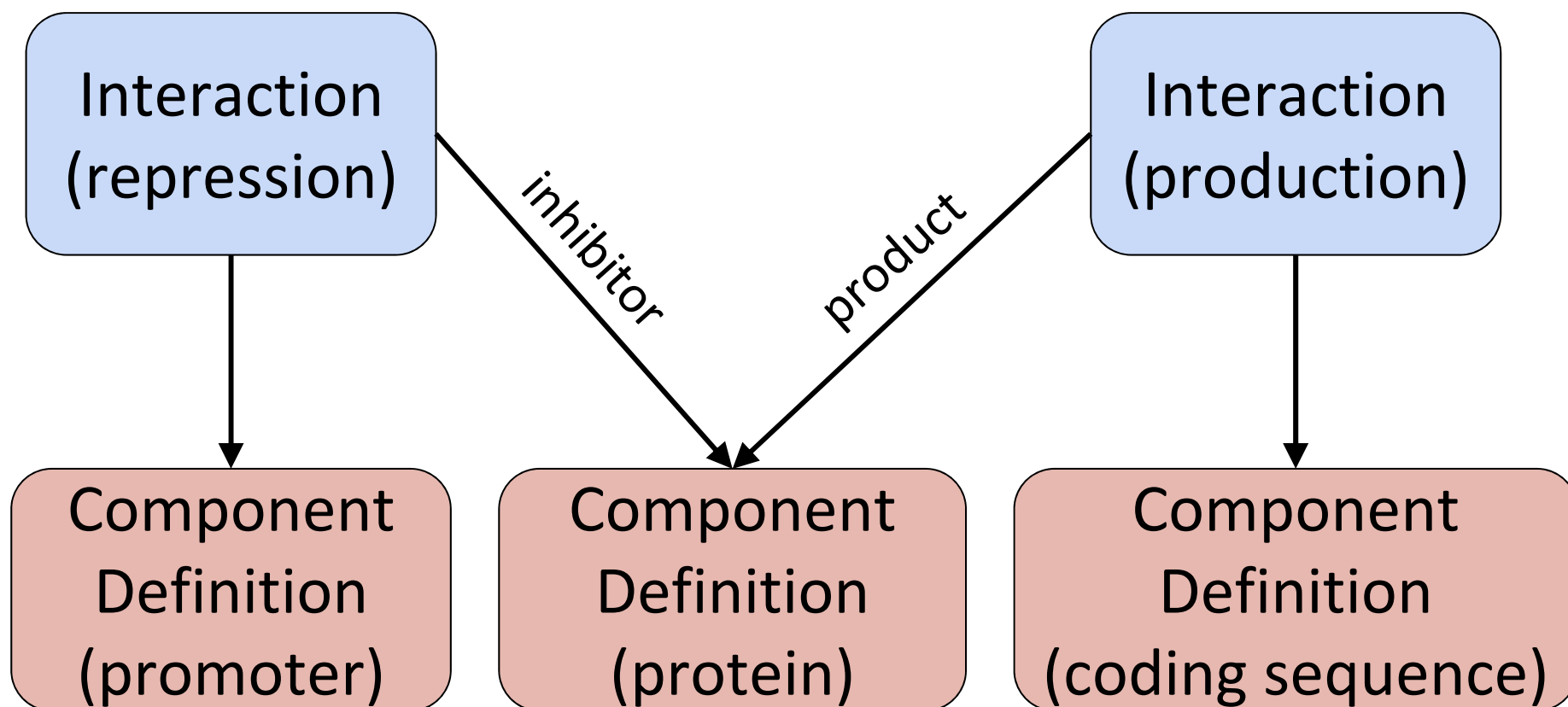
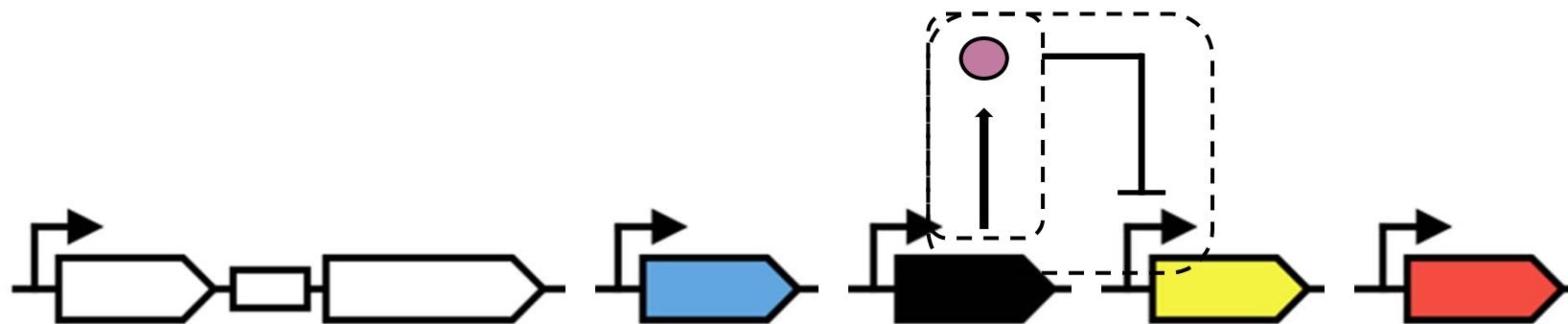


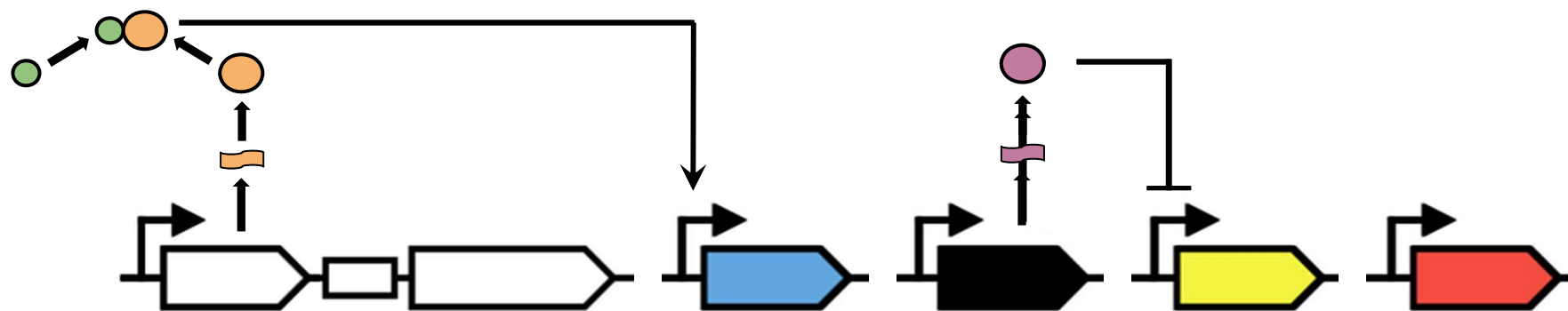
# EQuIP Characterization Module

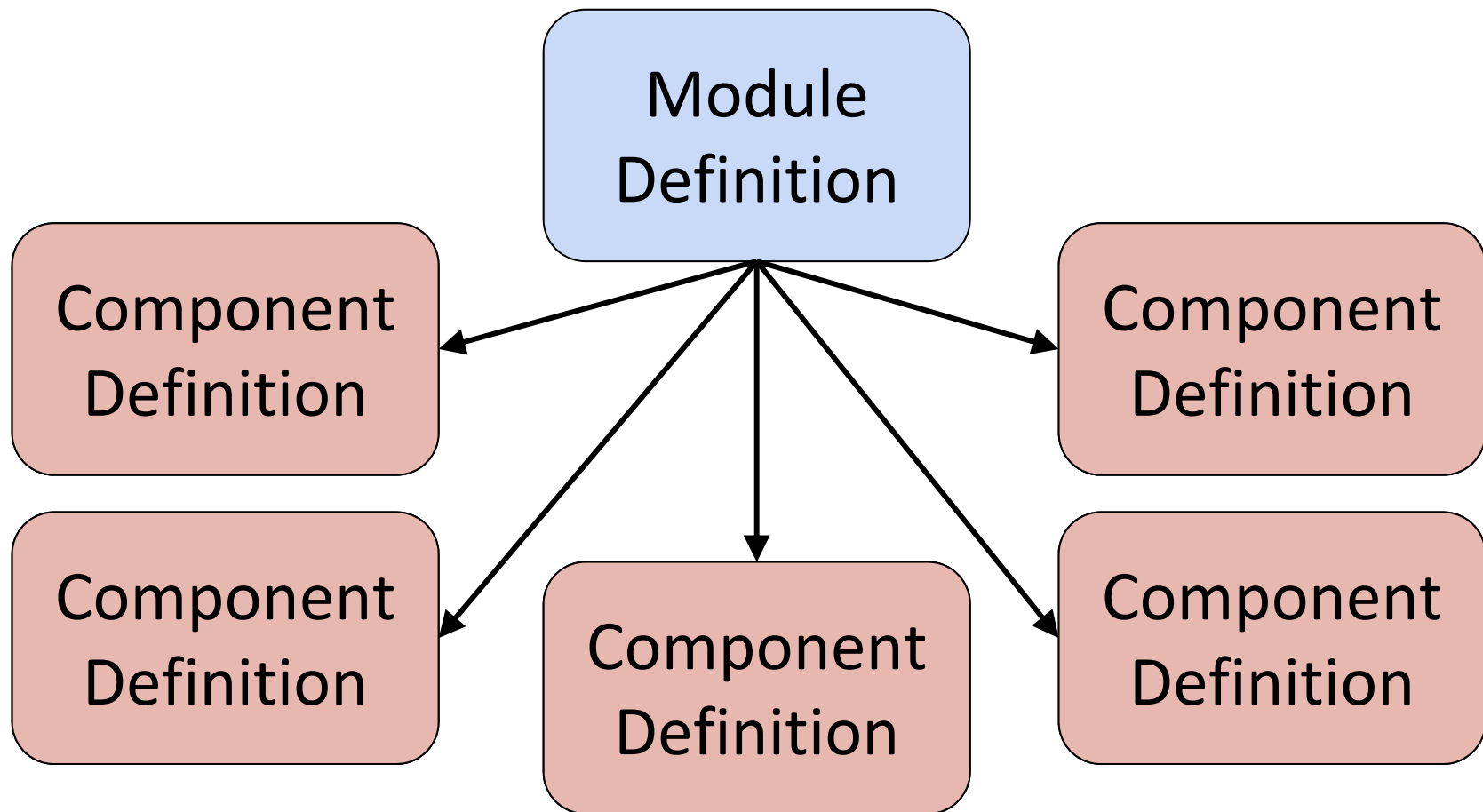
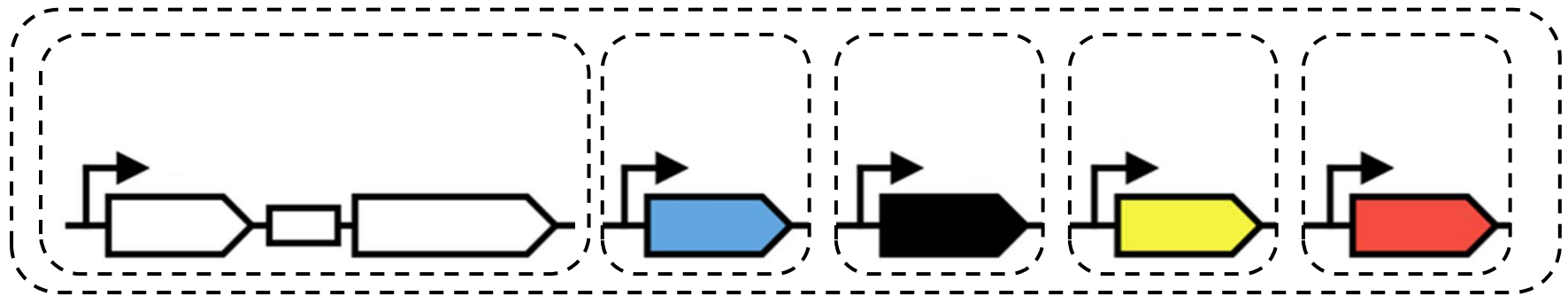


Noah Davidsohn, Jacob Beal, Samira Kiani, Aaron Adler, Fusun Yaman, Yingqing Li, Zhen Xie, and Ron Weiss. Accurate Predictions of Genetic Circuit Behavior from Part Characterization and Modular Composition. *ACS Synth. Biol.* 2015, 4, 673-681.









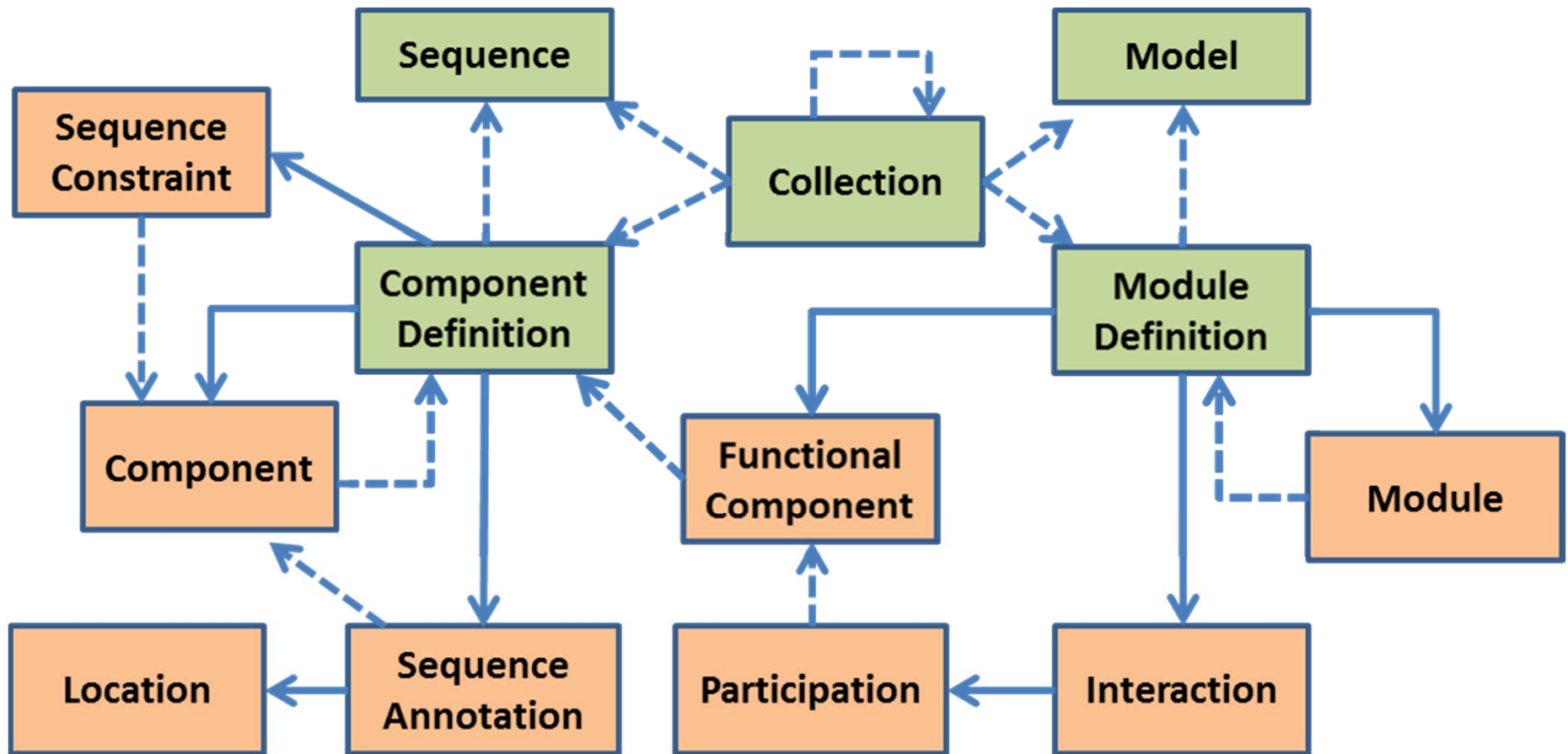
# Possible Strategies for Handling Multiplicity of Abstraction

1. Meta-Standards
2. Abstraction Packages
3. Flattening Routines

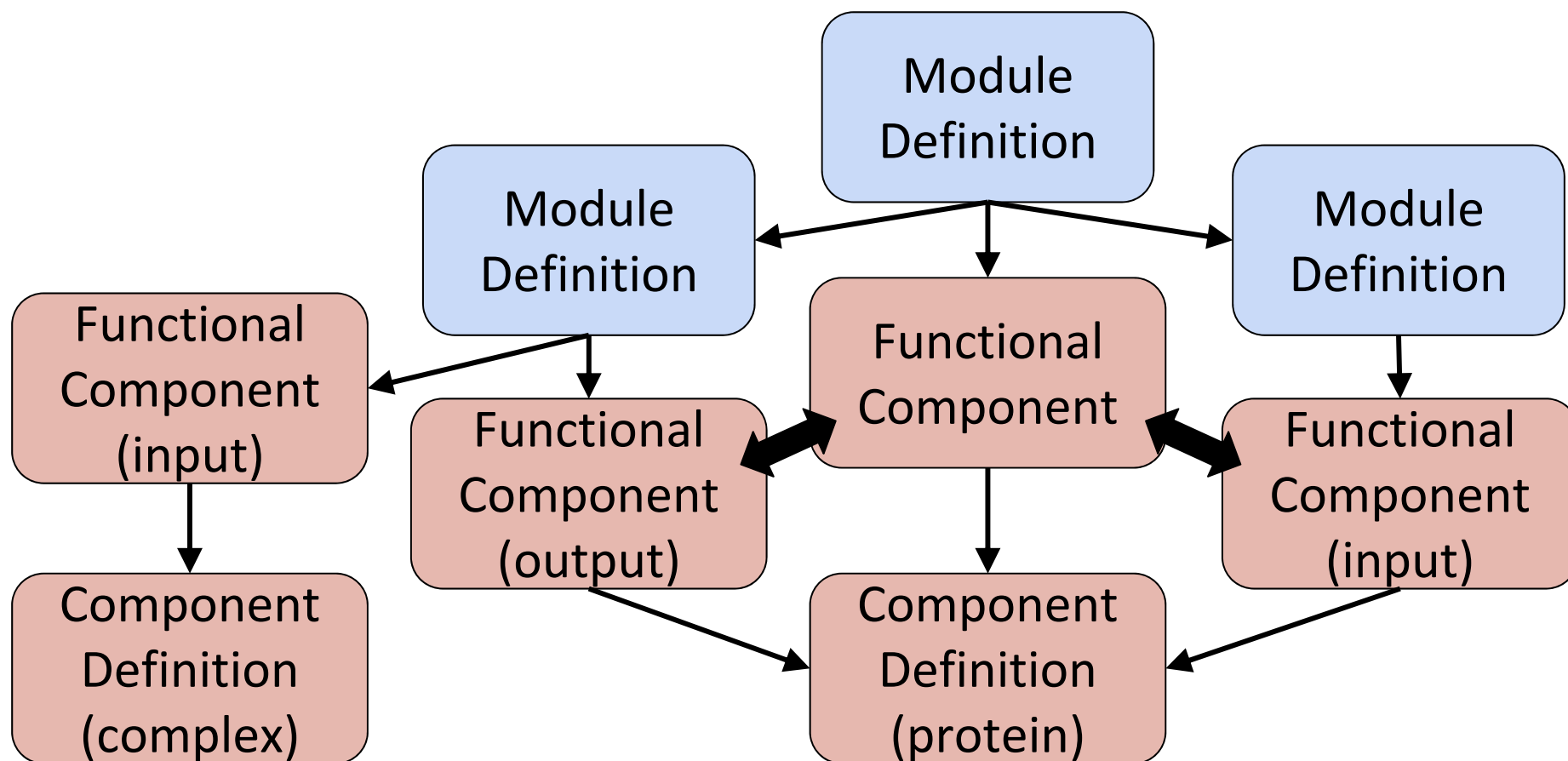
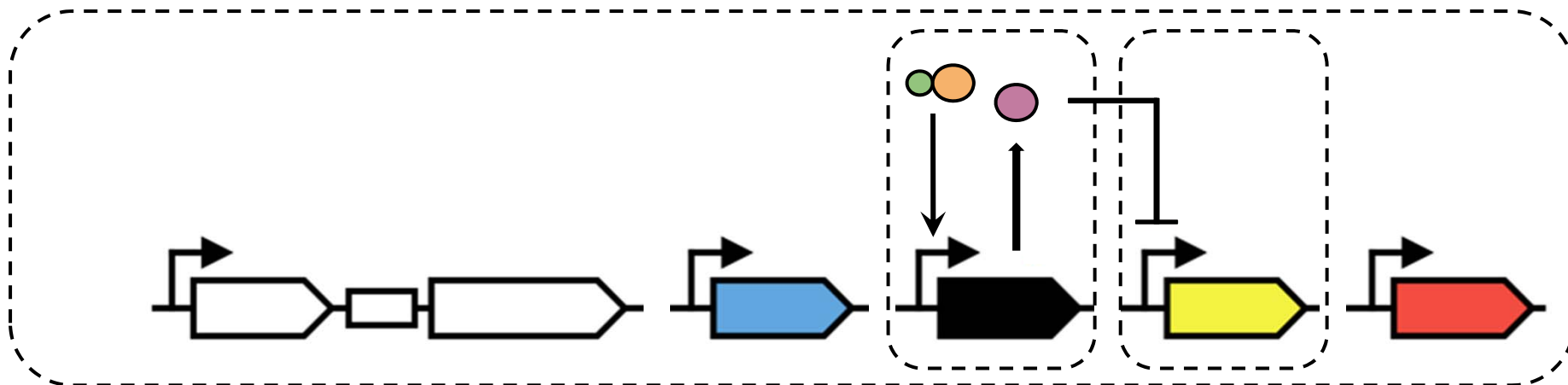
# Multiplicities of Representation

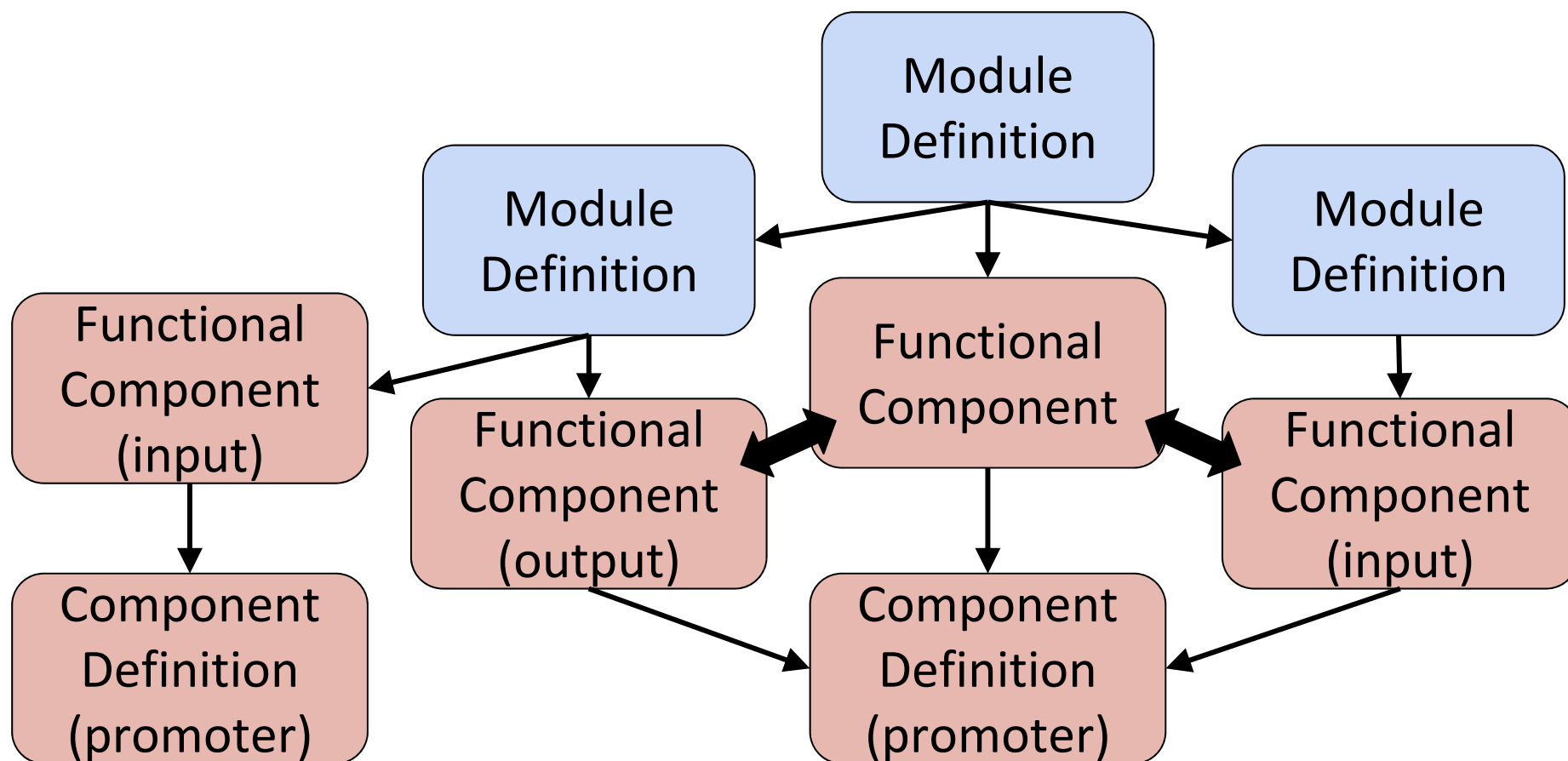
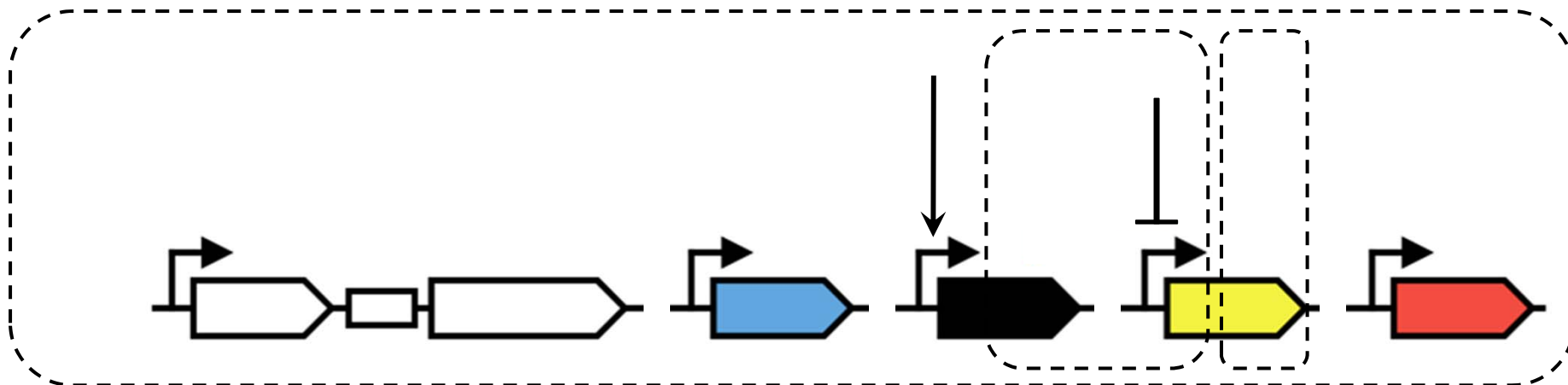
1. Ontology Terms
2. Abstraction
3. Hierarchical Organization

# Detailed SBOL 2.0 Data Model









# Possible Strategies for Handling Multiplicity of Organization

## 1. Meta-Standards

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