COMPUTATIONAL SEMANTICS

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WHAT IS COMPUTATIONAL SEMANTICS?

Reinterpretation

Turn left ~~and~~ or right
to reach San Marco.

What is semantics about?

Truth Verification

Bolt is faster than everyone else. **YES**

Bolt is in last position. **NO**

What is semantics about?

Checking for new information

Checking for new information

Checking for new information

Contradiction Checking

What is semantics about?

Contradiction Checking

What is semantics about?

Machine Translation

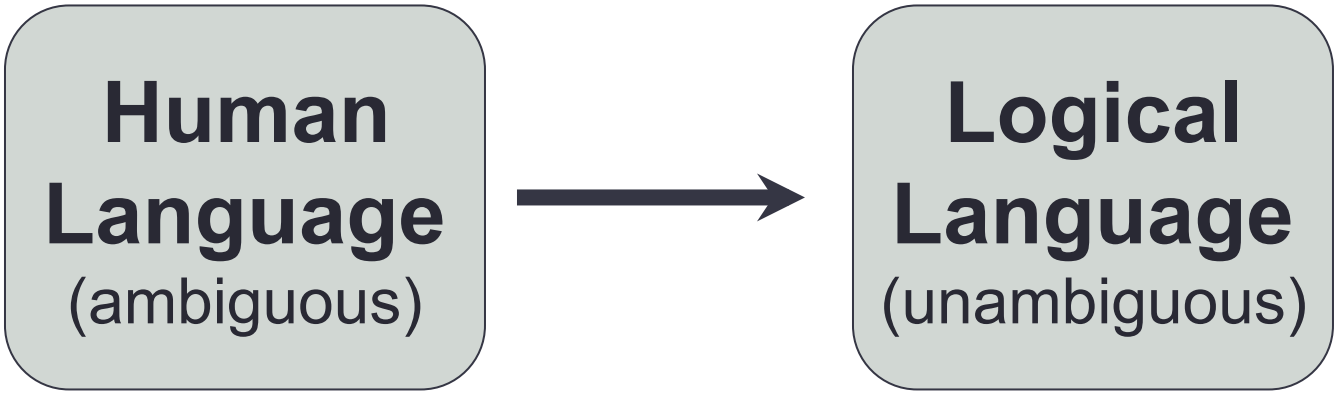
What is semantics about?

COMPUTATIONAL SEMANTICS IS ABOUT MAKING INFERENCES

With the help of meanings. But what are meanings?

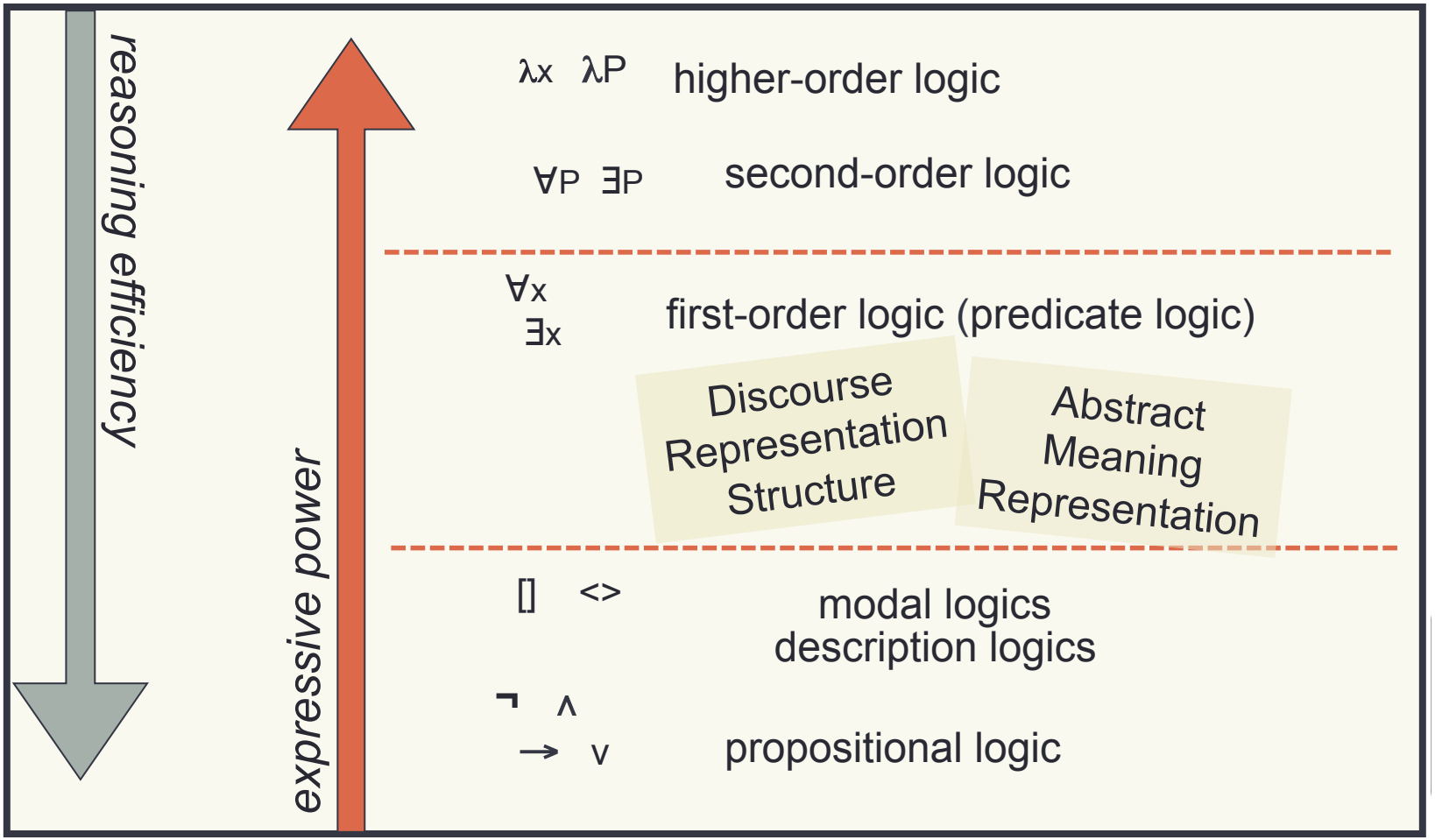
The big idea of computational semantics

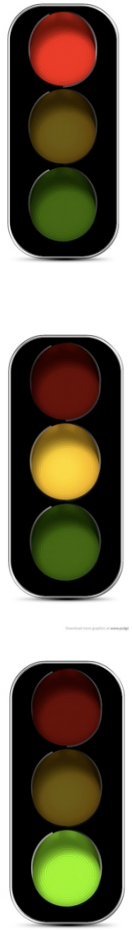
- Automate the process of associating semantic representations with expressions of natural language



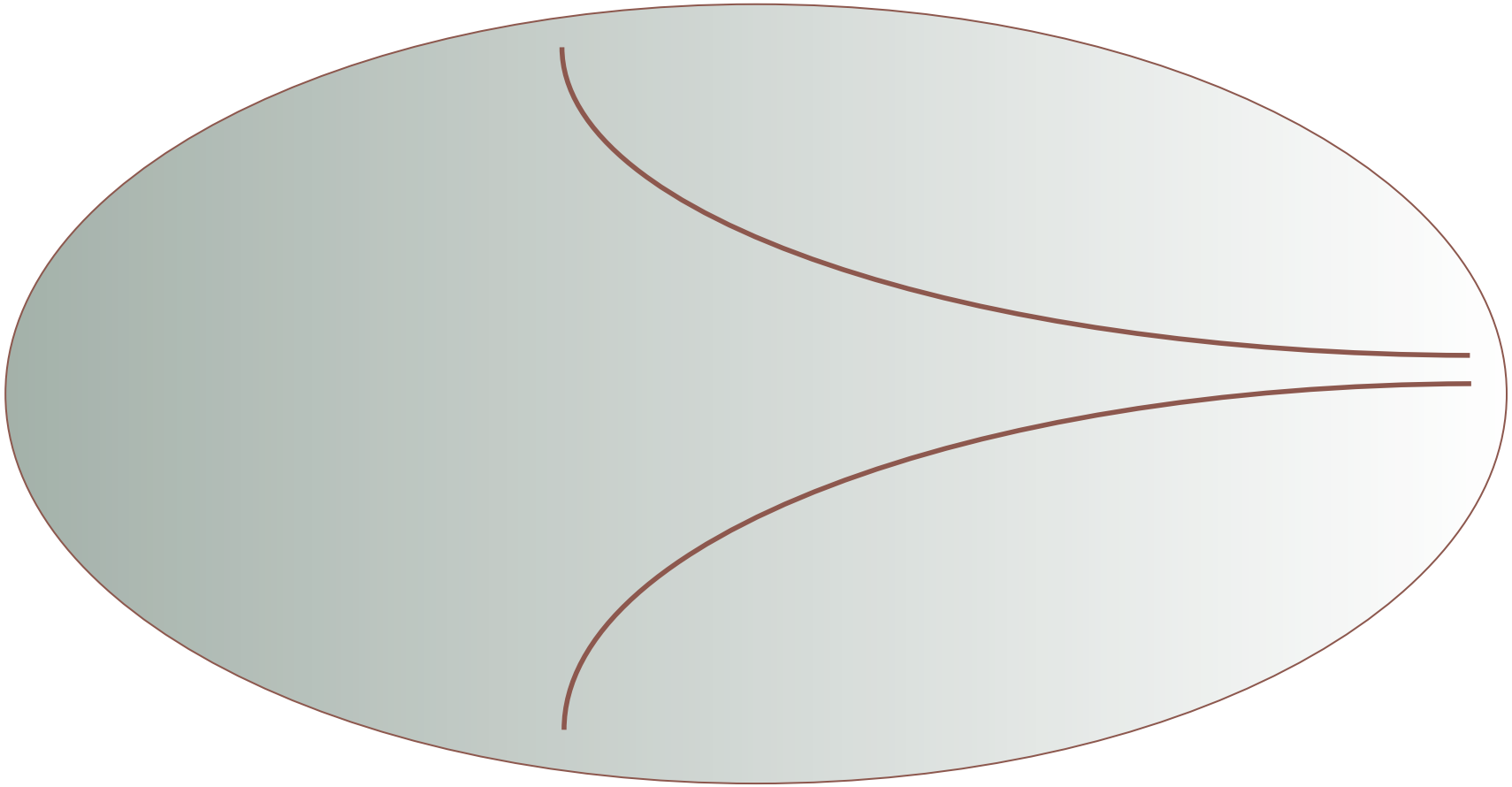
- Use logical representations of natural language to automate the process of drawing inferences

Controlling Inference

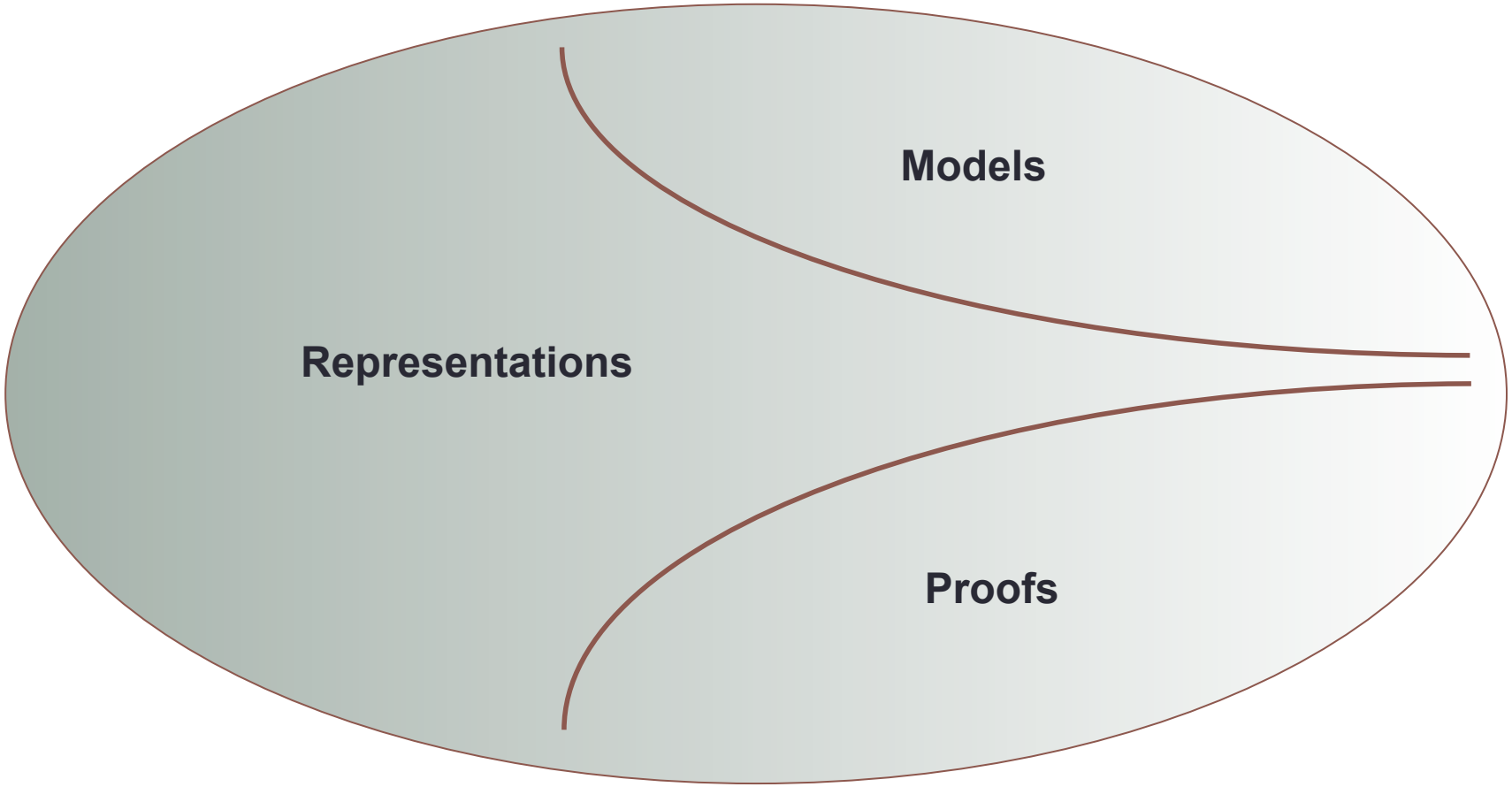




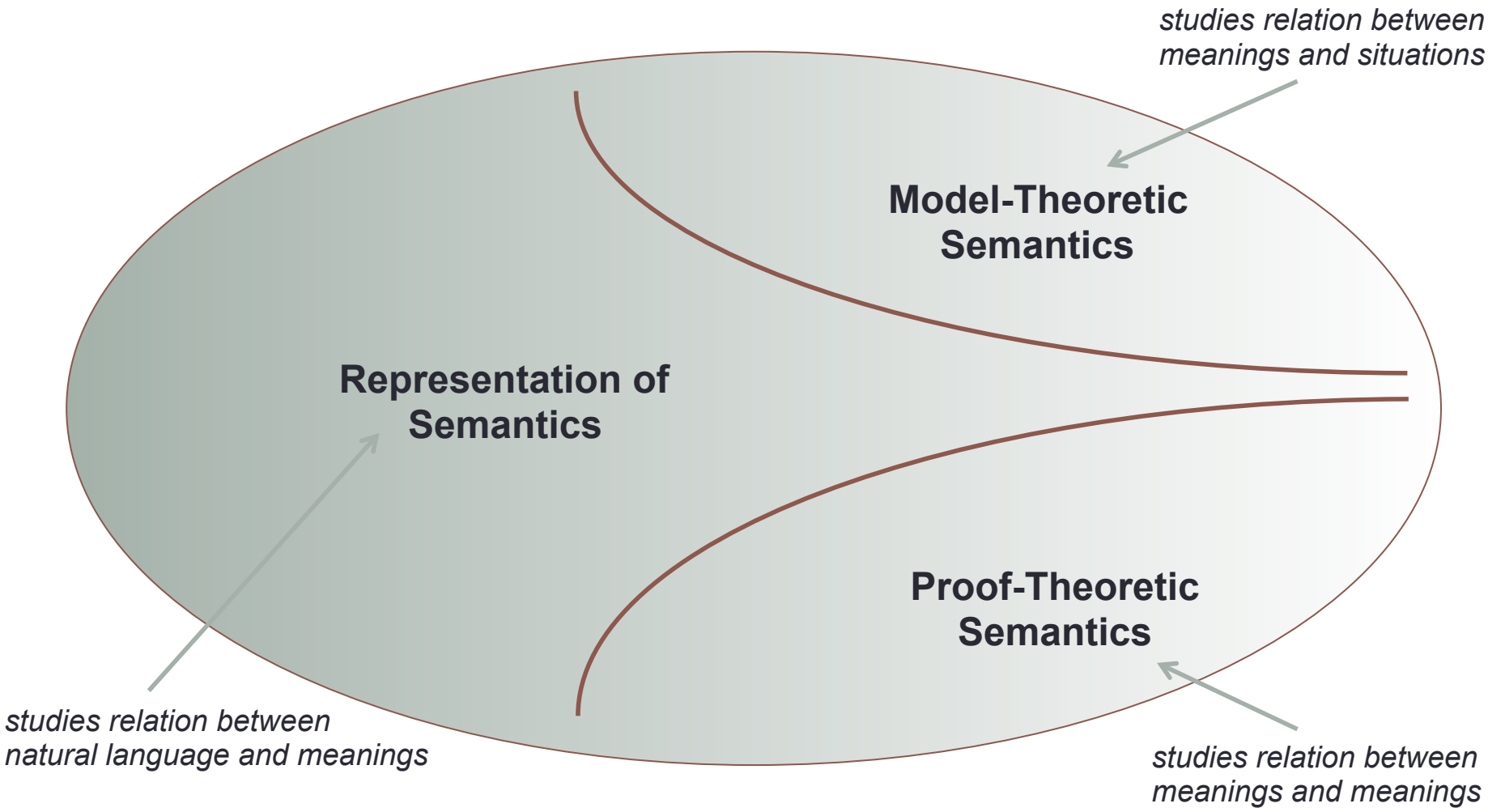
Planet X



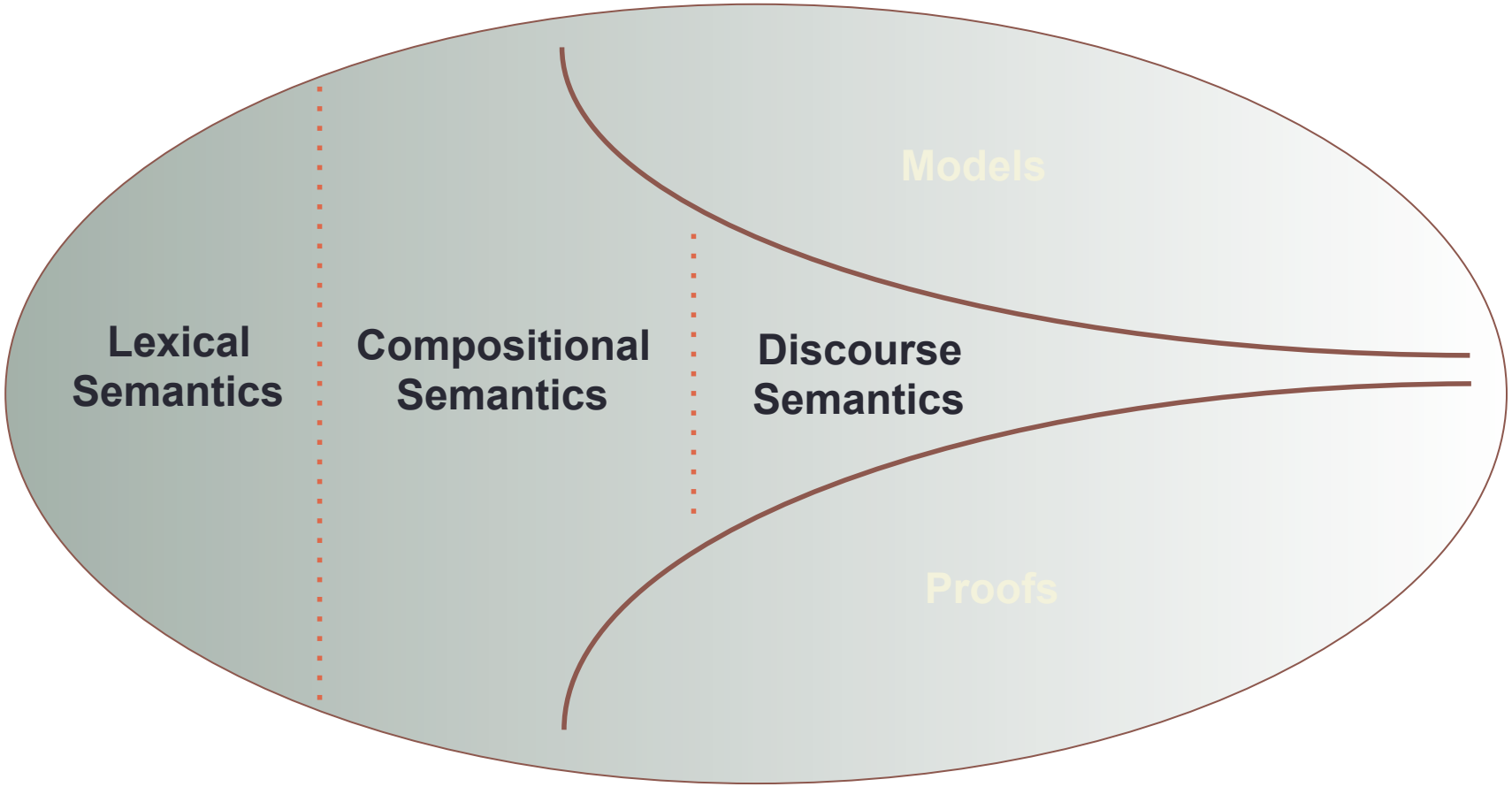
Planet Semantics



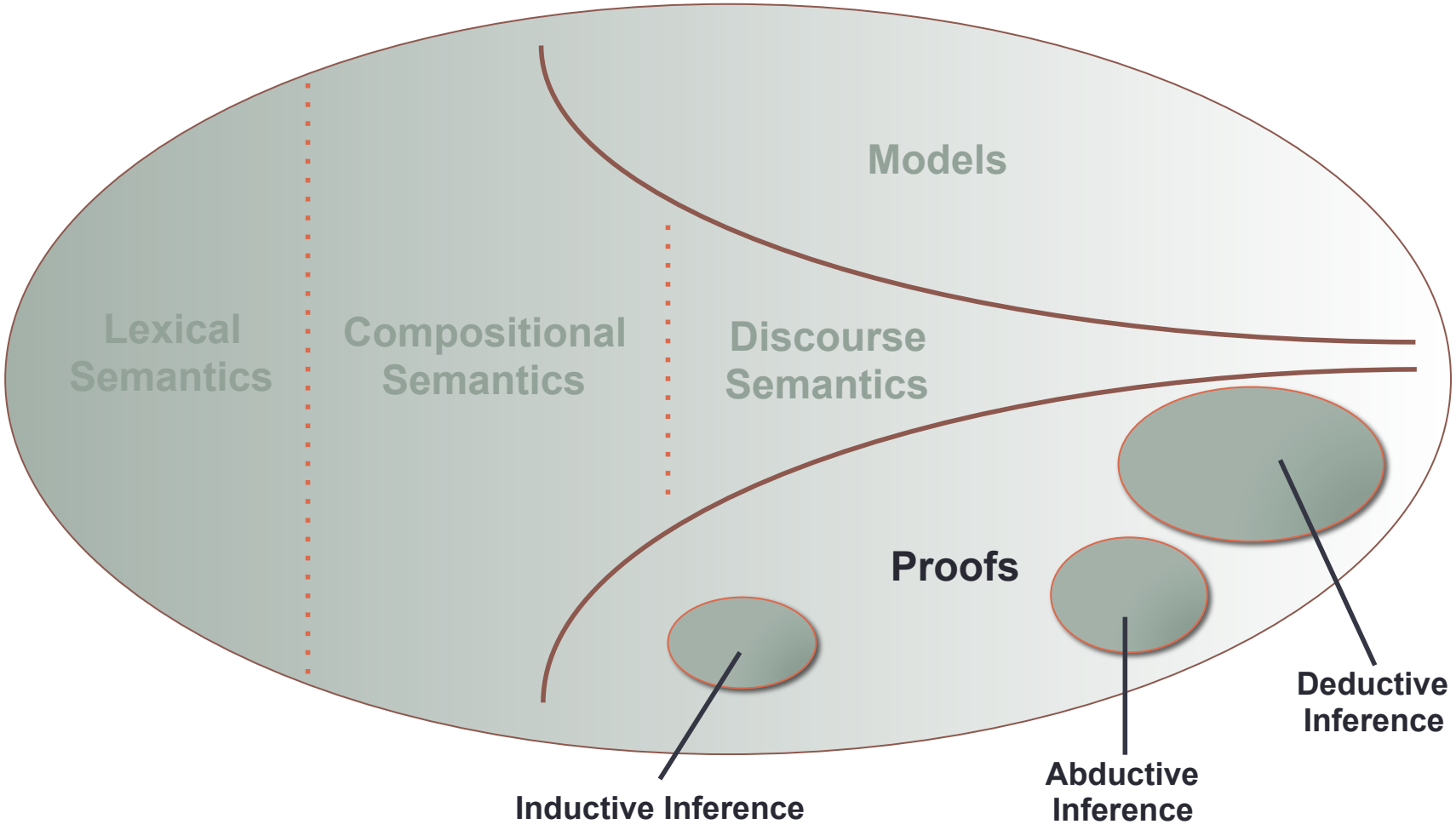
Planet Semantics



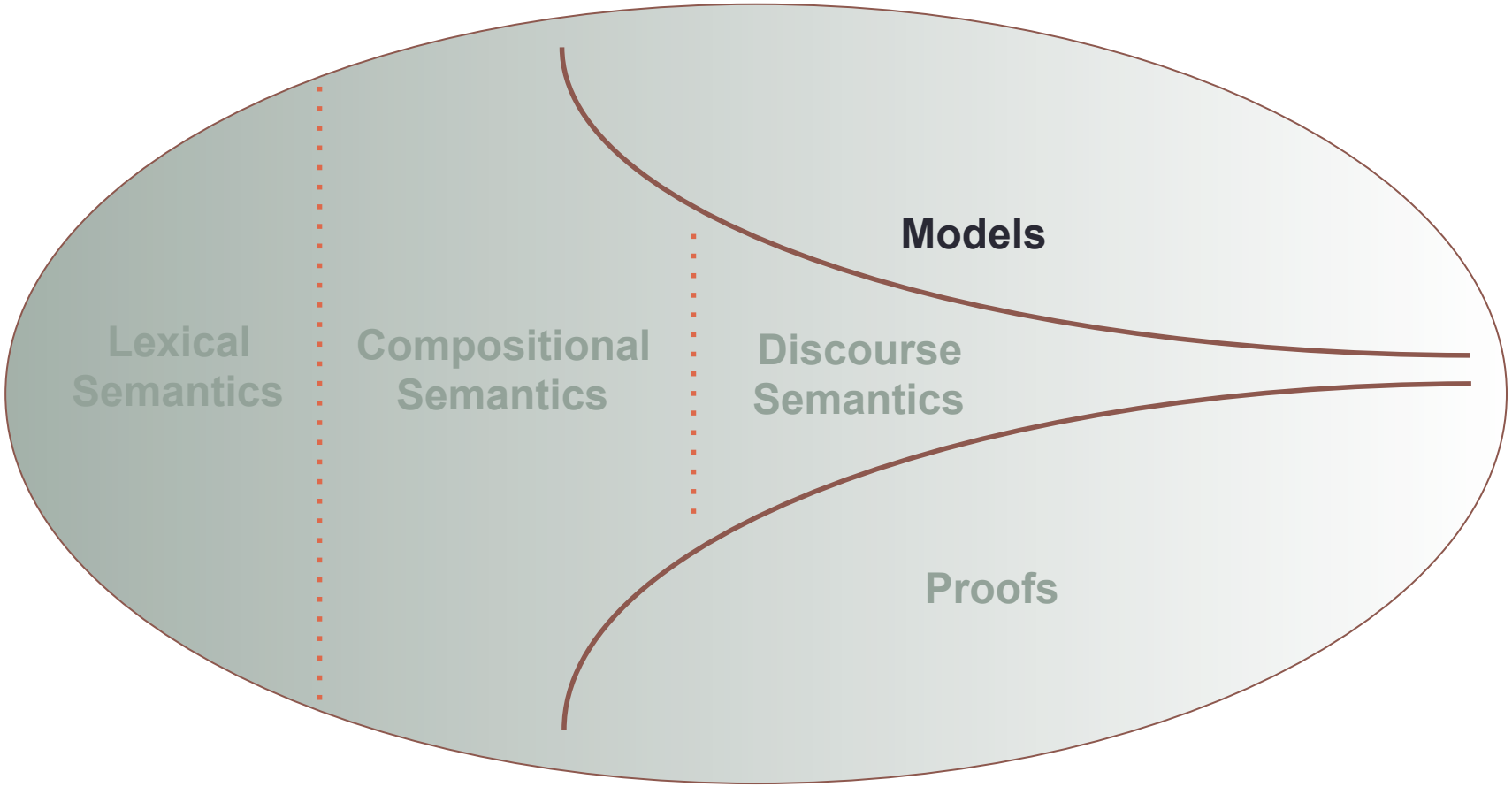
Representation



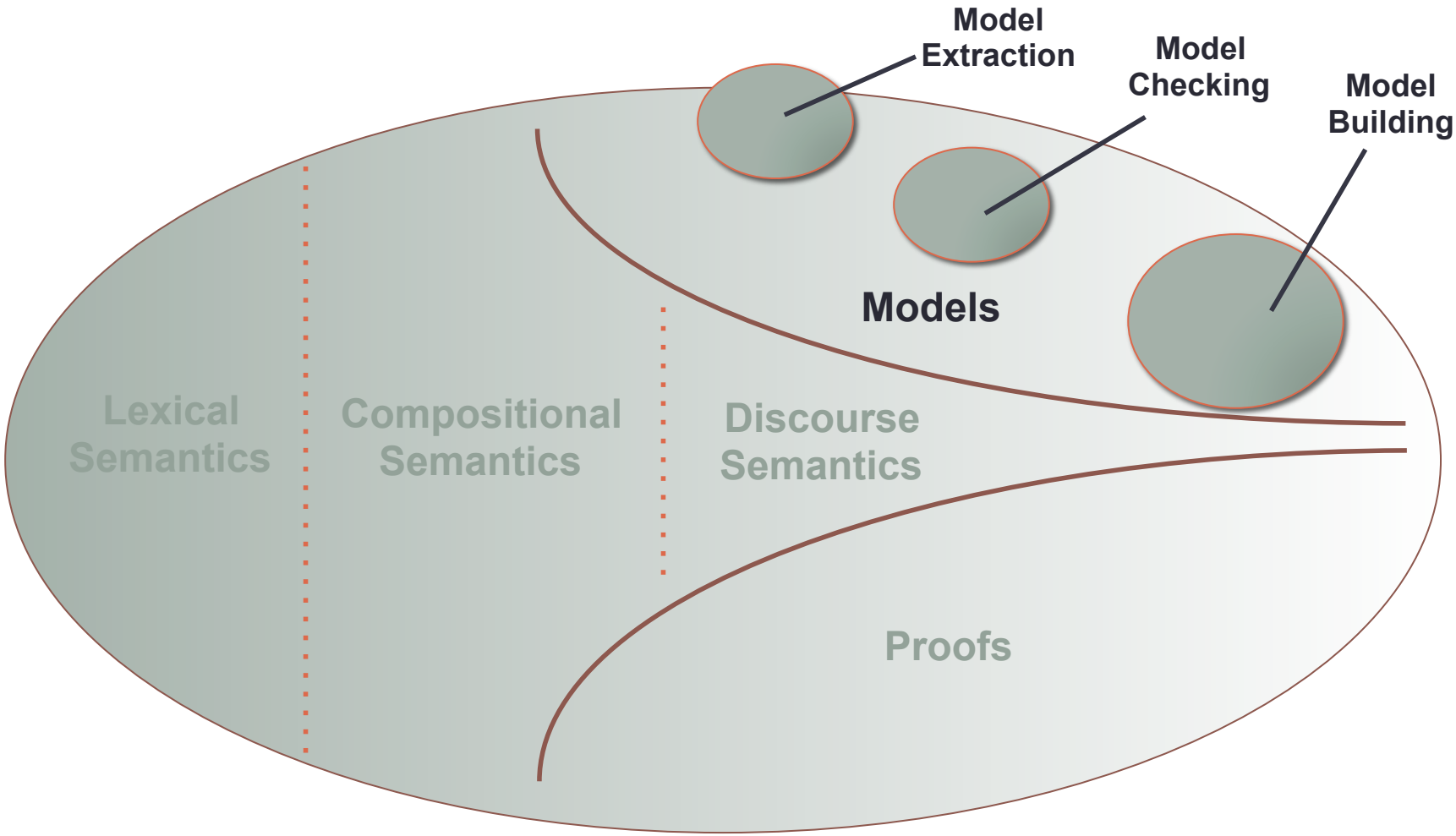
Proof-Theoretical Semantics



Model-Theoretic Semantics



Model-Theoretic Semantics



Computational Semantics

- **Day 1: Exploring Models**
- **Day 2: Meaning Representations**
- **Day 3: Computing Meanings**
- **Day 4: Drawing Inferences**
- **Day 5: Meaning Banking**

Computational Semantics

- **Day 1: Exploring Models**
  - **What are models?**
  - **Vocabularies**
  - **Static and dynamic situations**
  - **Modelling events**

Computational Semantics

- **Day 2: Meaning Representations**
  - **First-order logic syntax**
  - **Model checking (including an amazing demo)**
  - **DRS (Discourse Representation Structure)**
  - **AMR (Abstract Meaning Representation)**