Deep Specialization

Integrating Powertypes into Deep Modeling

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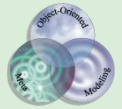
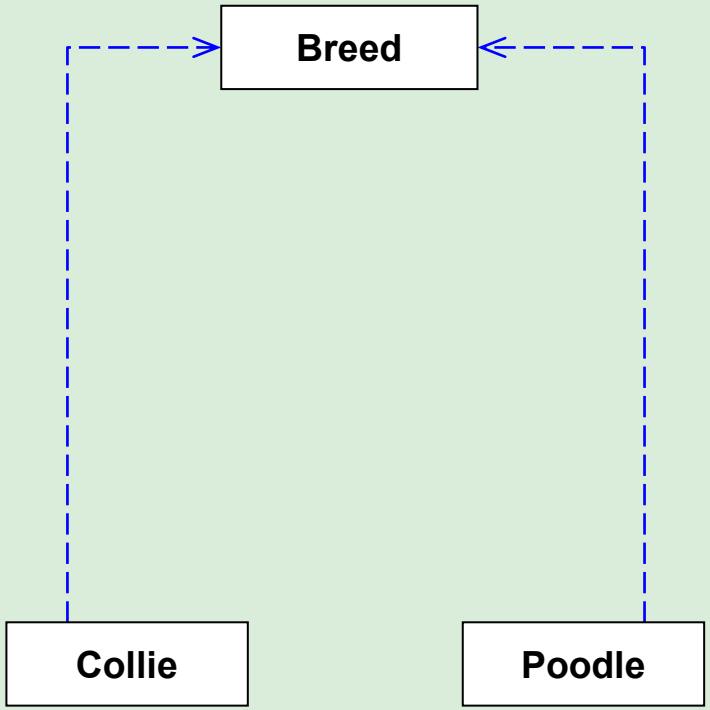
Motivation

Deep Modeling lacks Powertypes

- Not strictly an issue
  - » deep characterization via deep instantiation
- Option could still be useful
  - » better modeling pragmatics
  - » support does not require new constructs

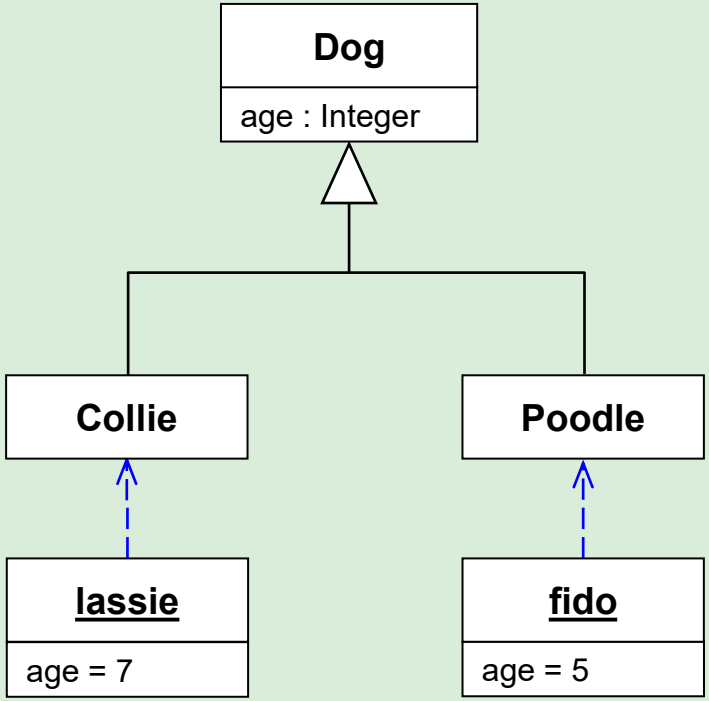


Powertypes

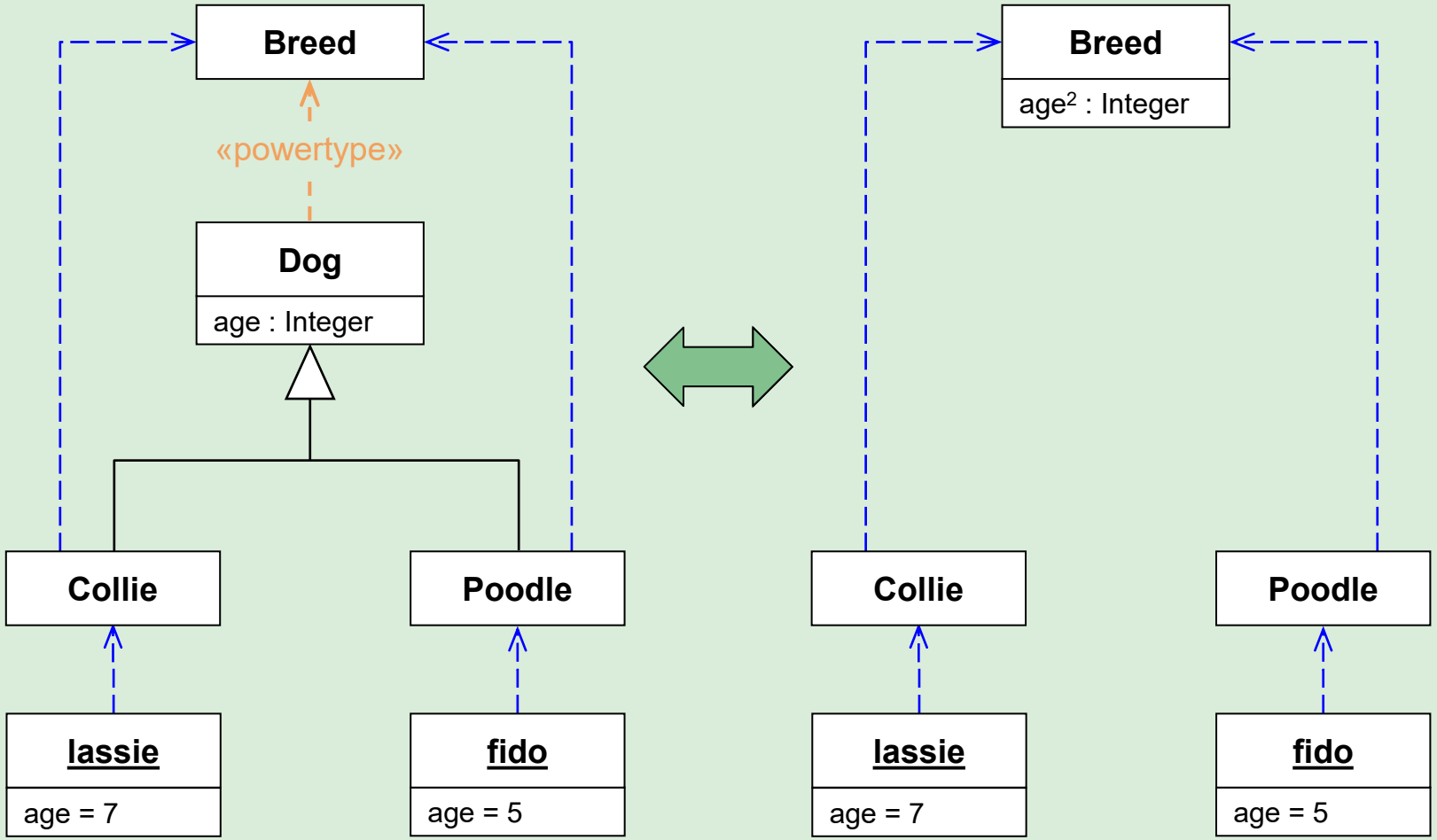


Concepts as Instances

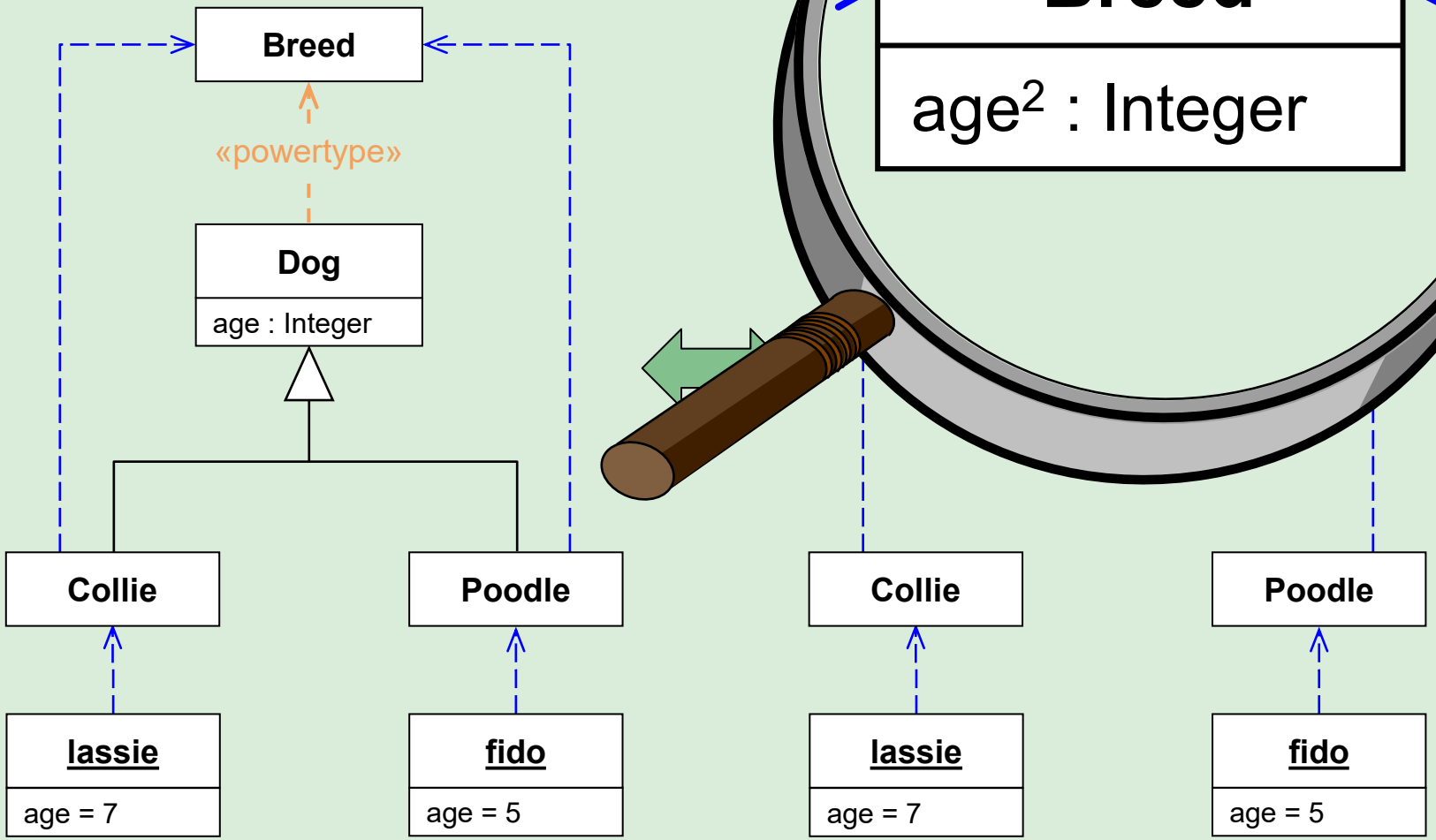
Concepts as Subtypes



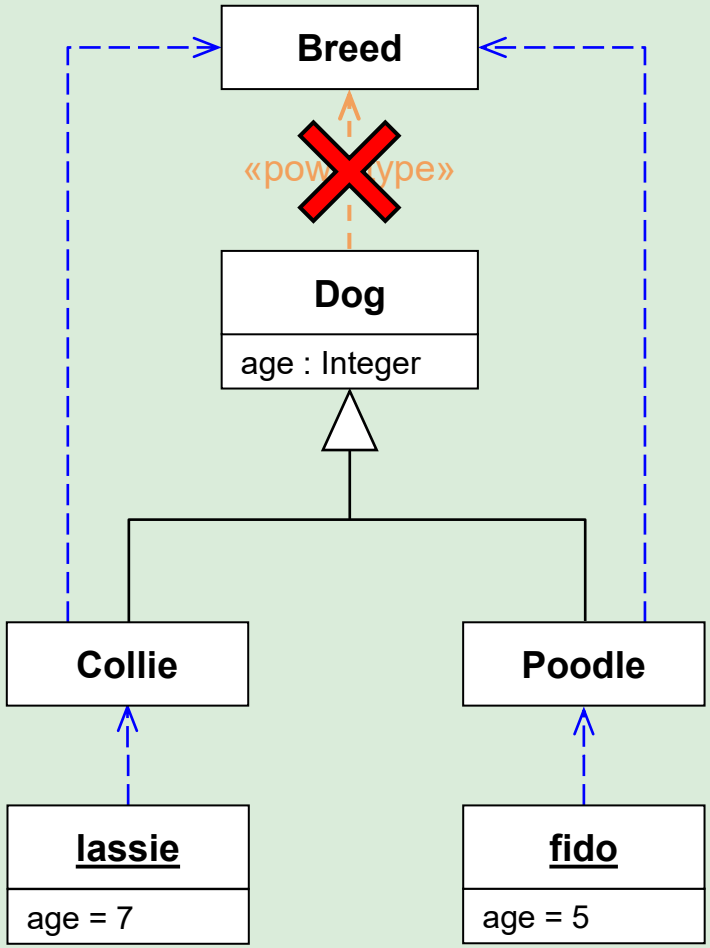
Deep Characterization



Deep Characterizati



Integration



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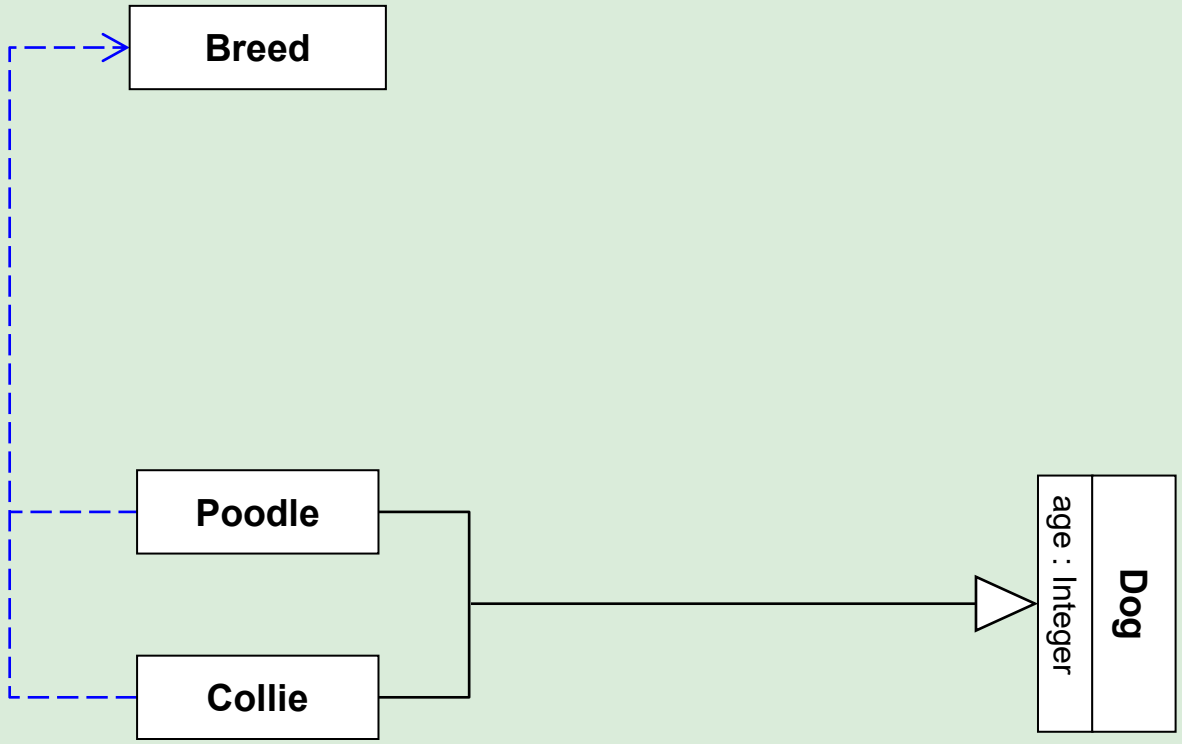
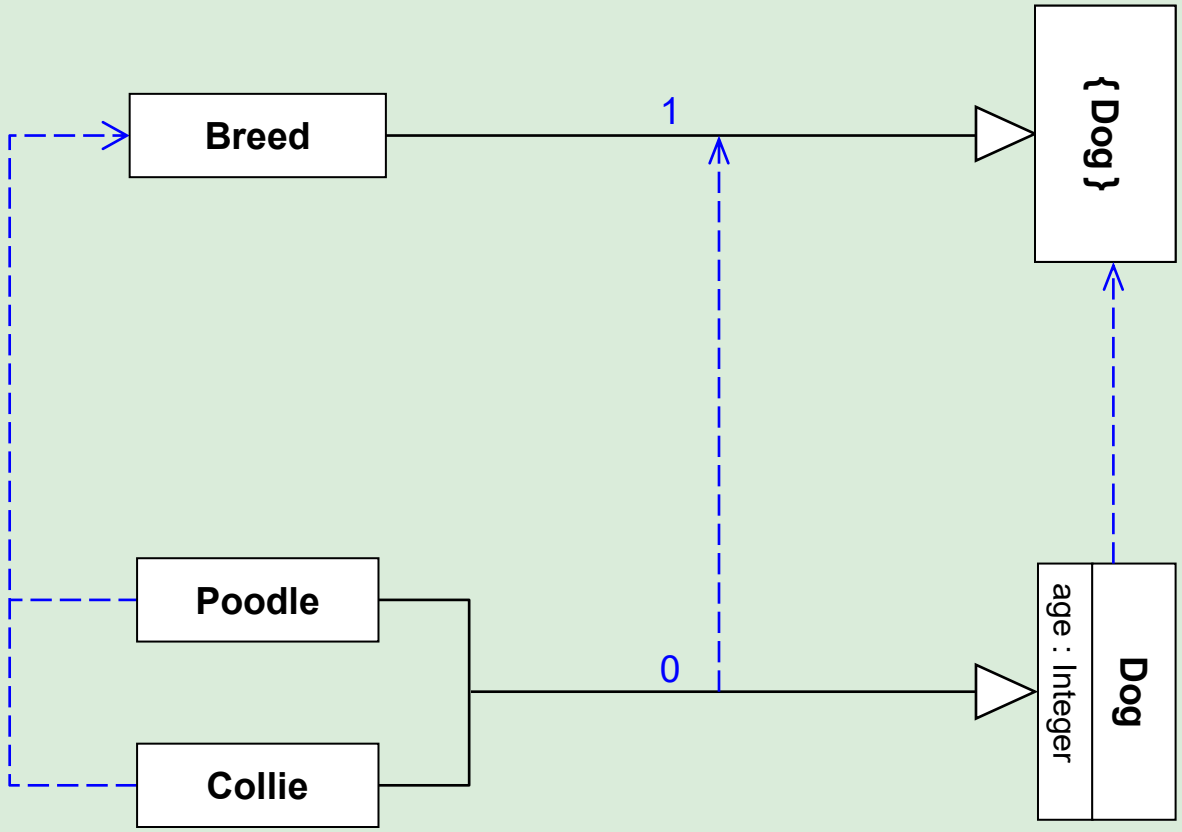
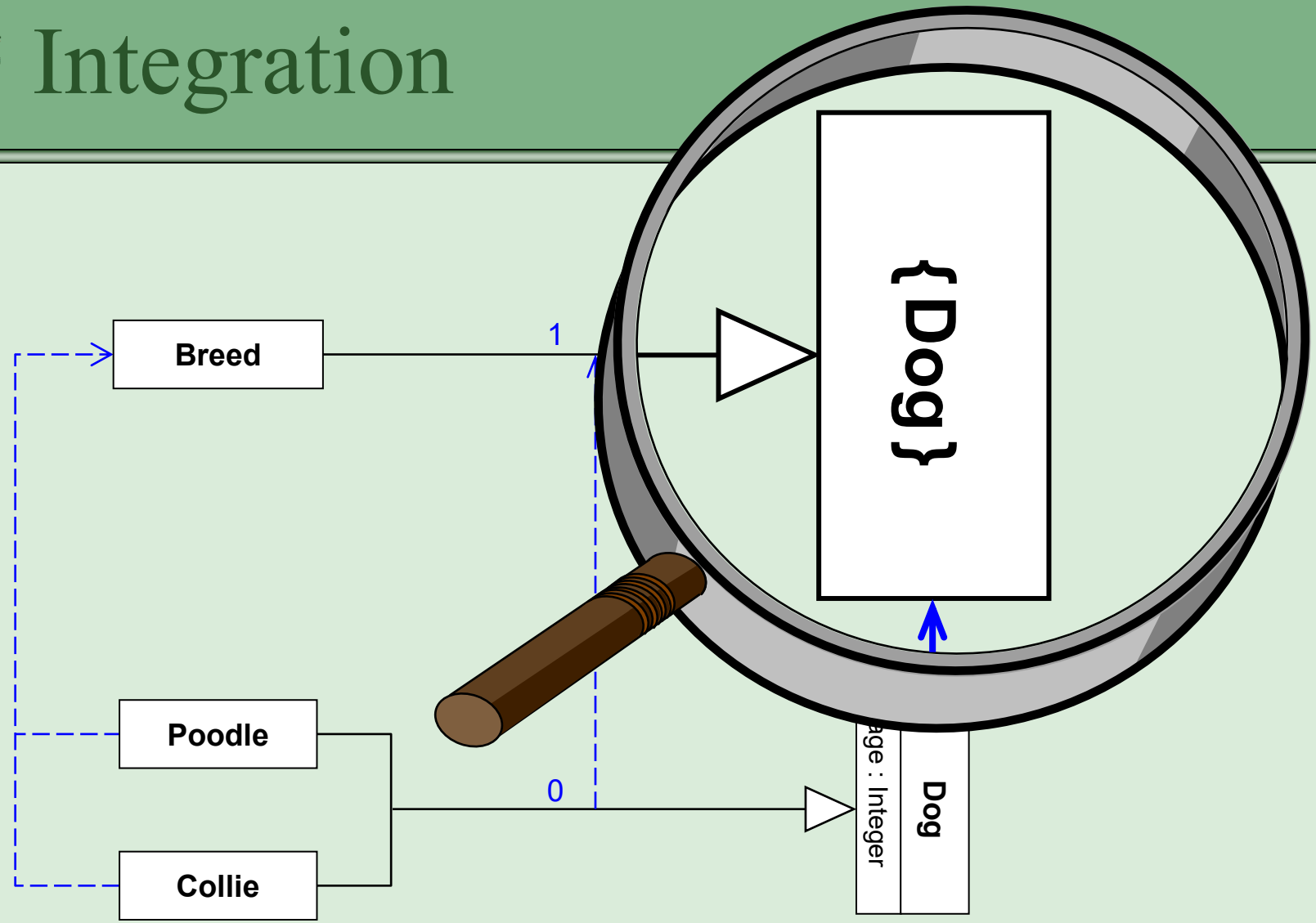


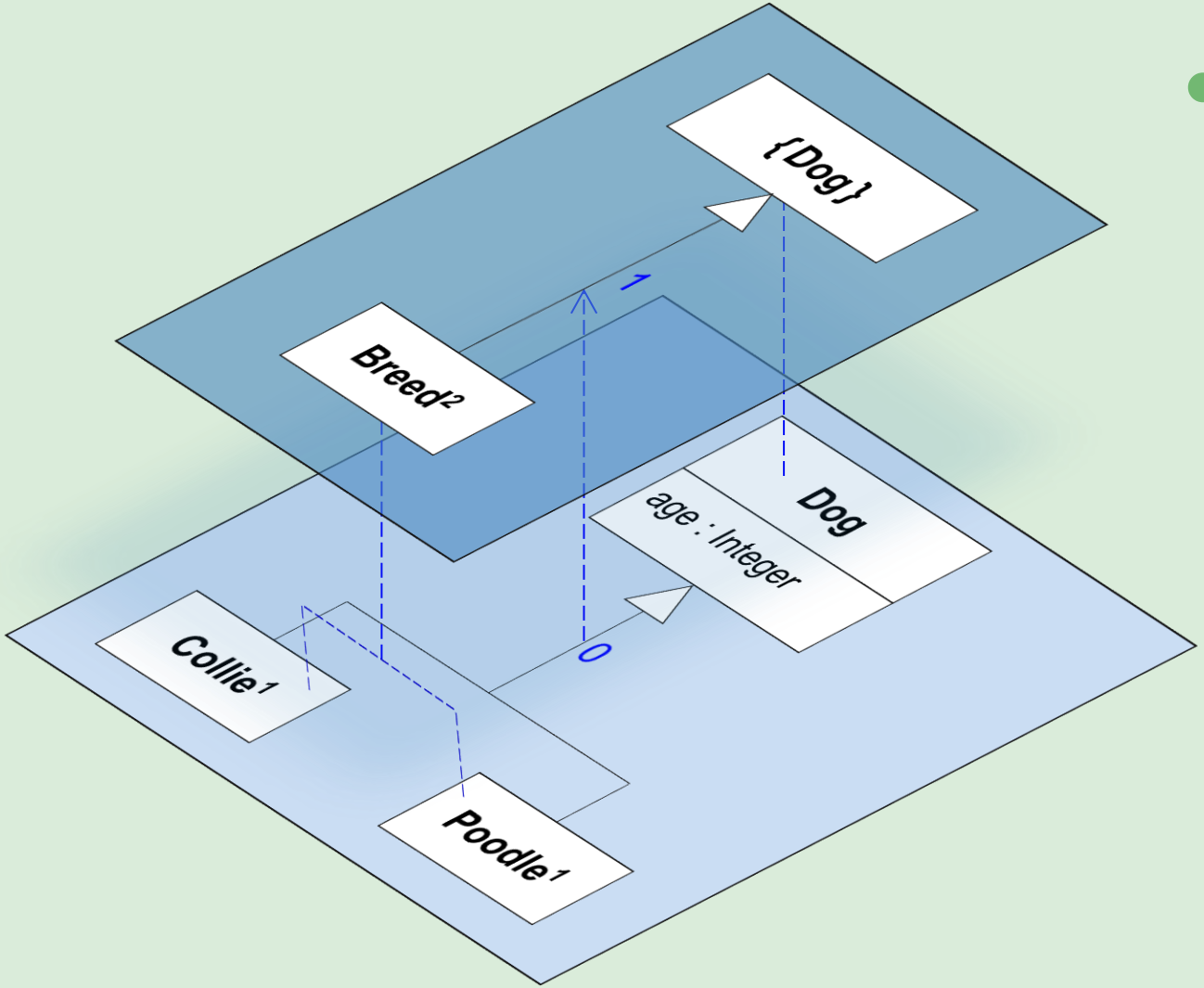
Integration



Integration

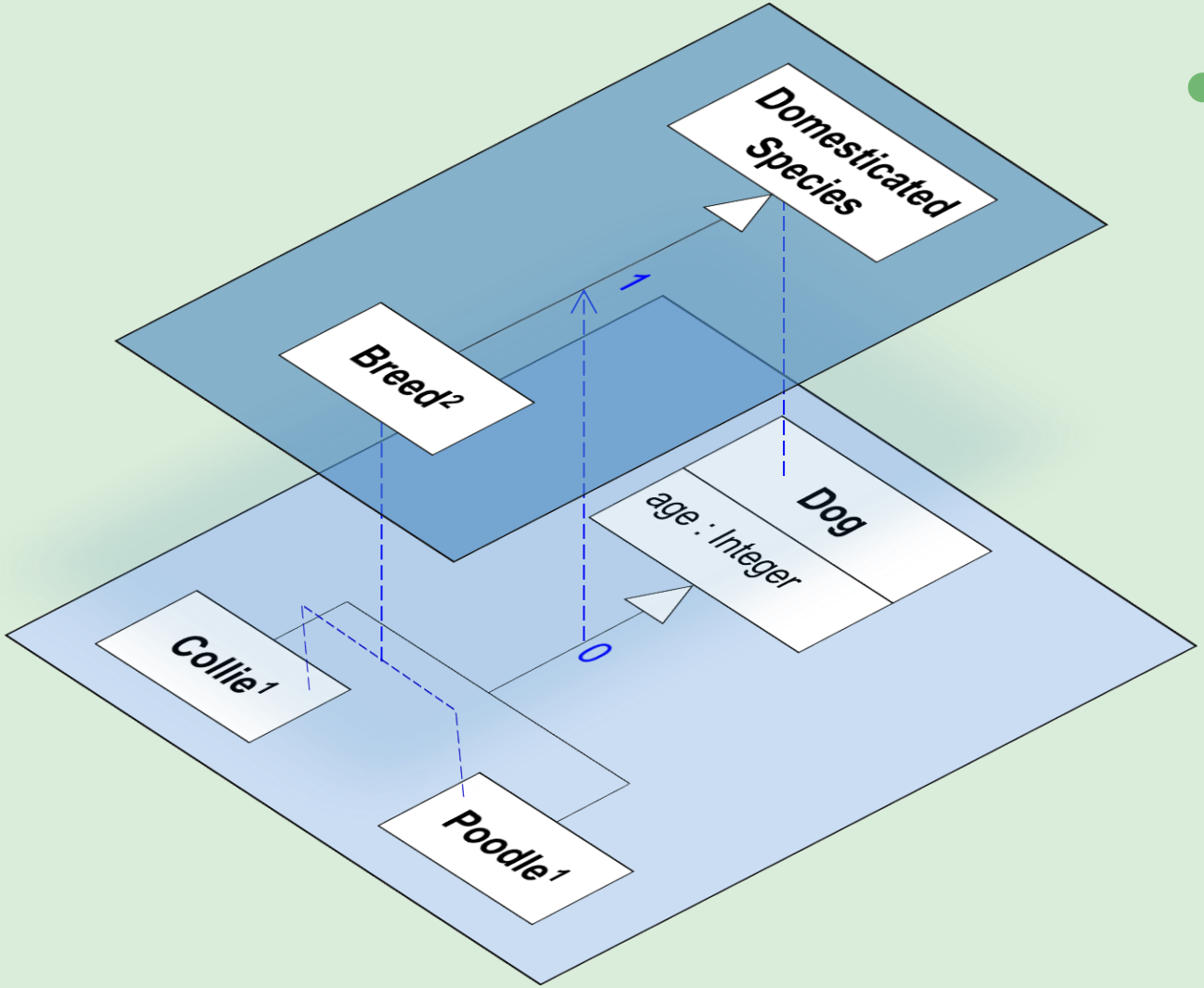


Deep Specialization



- Specializations as Connectors
  - » potency specification
  - » end multiplicities

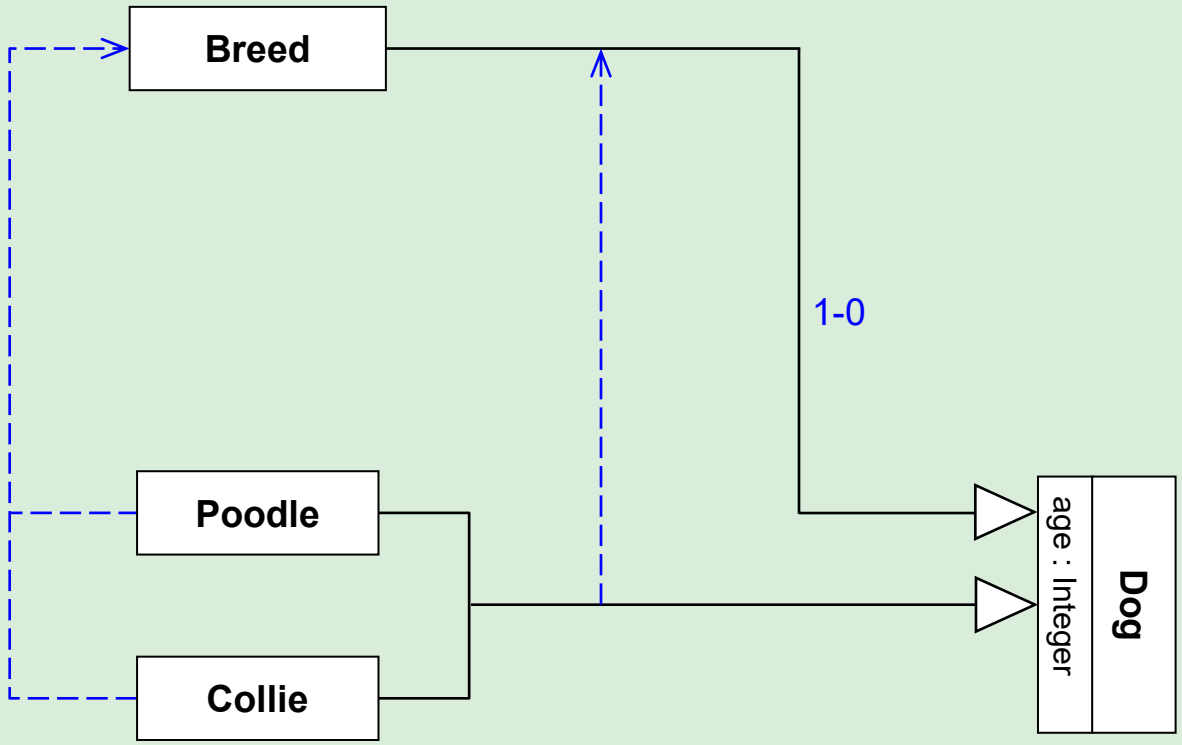
Subordination



- Specializations as Connectors
  - » potency specification
  - » end multiplicities
  - » powertypes as a special case of subordination

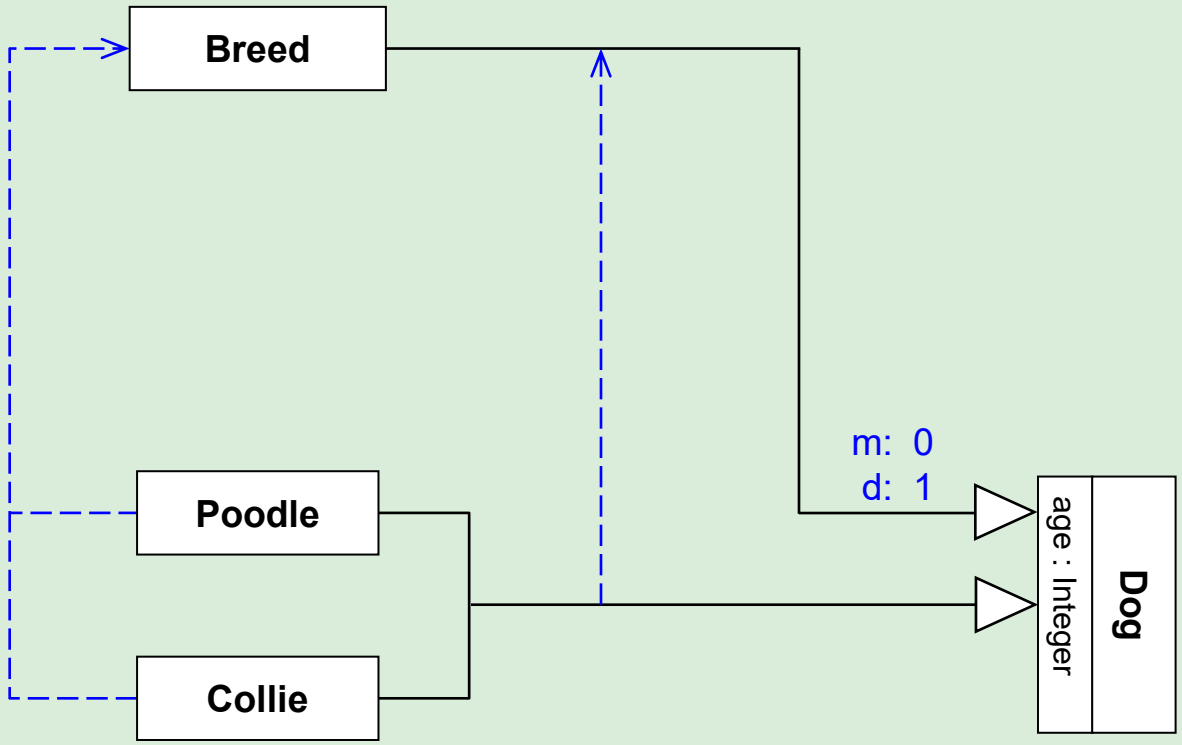
Deep Specialization

Dual Deep Potency



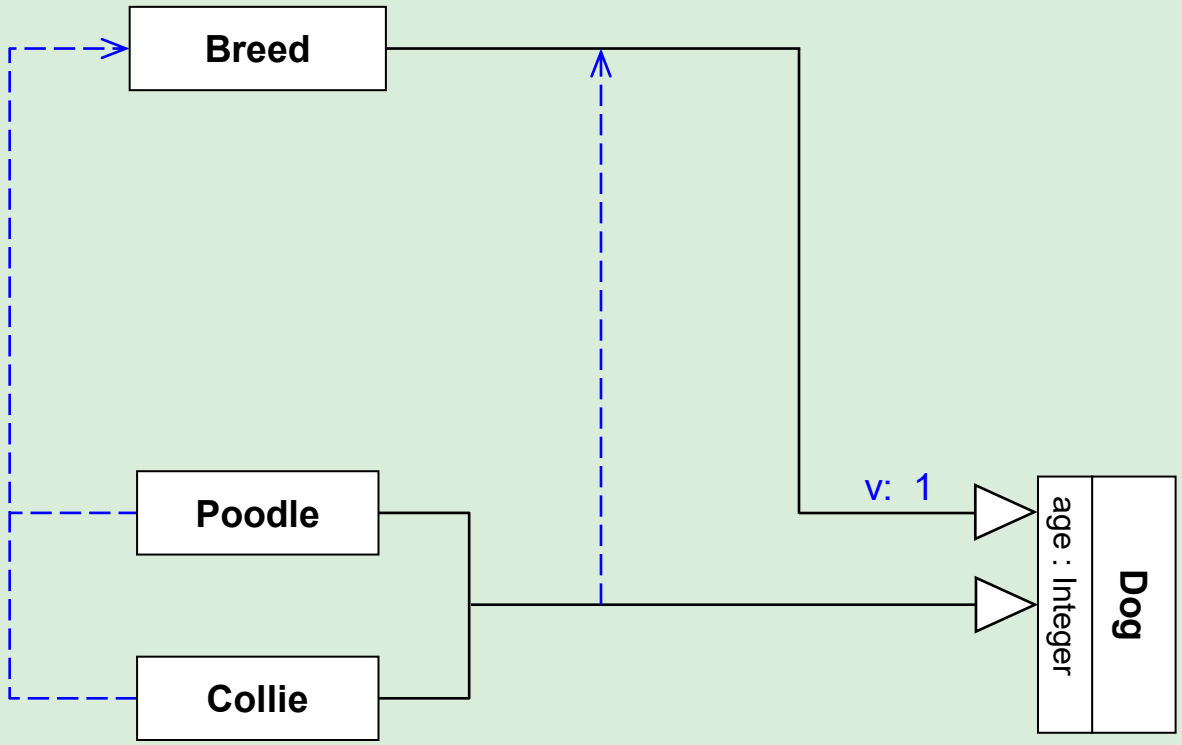
Deep Specialization

Mutability & Durability



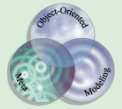
Deep Specialization

Value Potency



Conclusion

- Motivation
- Deep Specialization
- Insights



Conclusion

- Motivation
  - » powertype pragmatics
  - » no new construct
- Insights

Conclusion

- Motivation

- Deep Specialization
  - » specializations as potency-zero connectors
  - » potencies & multiplicities
  - » uses only known modeling concepts

Conclusion

- Motivation
- Deep Specialization
- Insights
  - » connectors support powertypes
  - » connectors support subordination
  - » subordinating subsumes powertyping

In the Paper Only

- Powertype background
- Formalization
  - » various variants
- Comparison to constraints & dedicated construct
- Iso-Level vs Cross-Level discussion
  - » more mechanisms (e.g., concretization) to cover
- Related & Future Work
  - » targeting instanceOf links vs specialization links
  - » multiplicity implications