

1.1 Intelligent Agents

Virginia Tech CS 5804
Introduction to Artificial Intelligence
Bert Huang

artificial intelligence

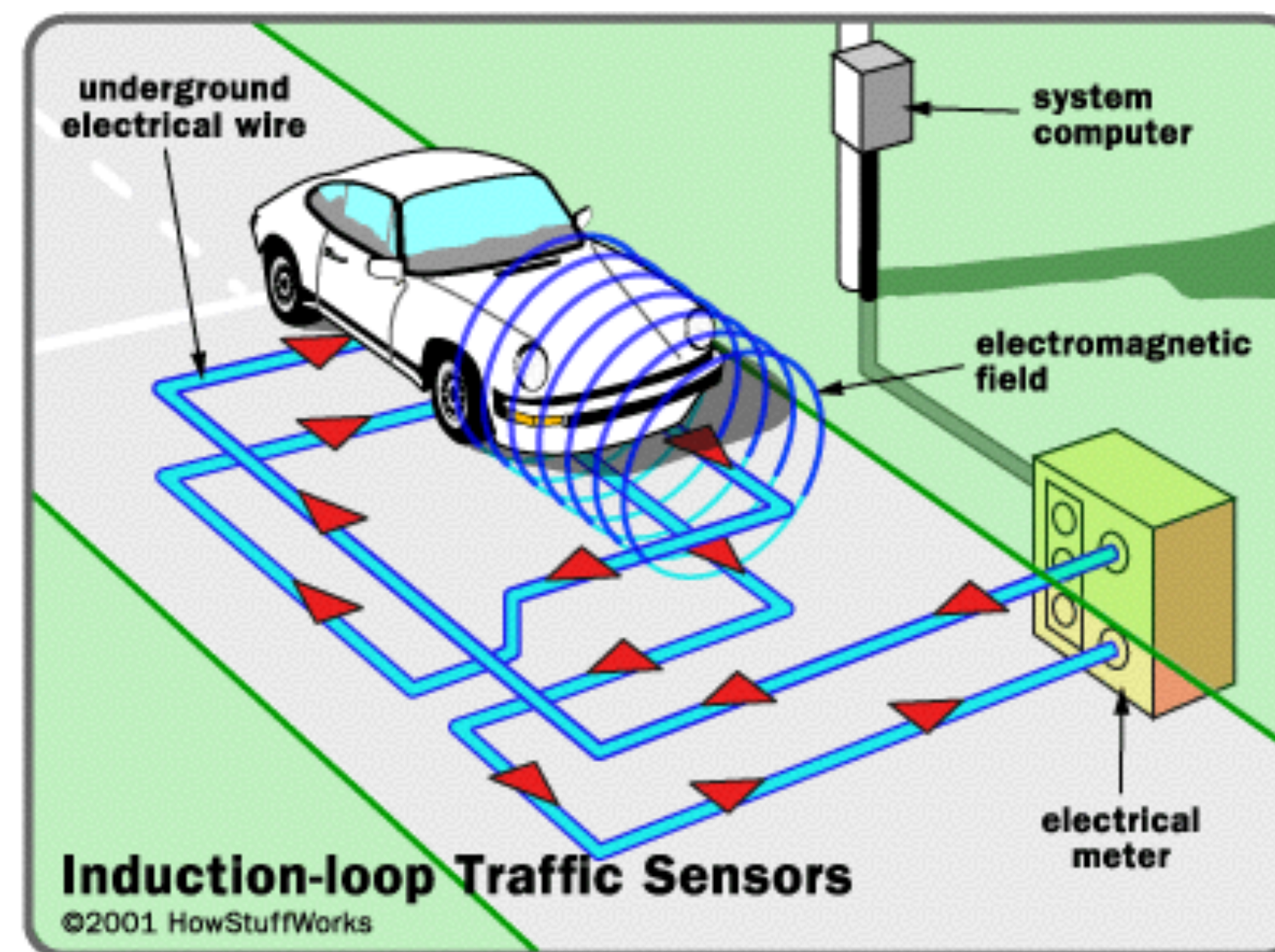
the theory and development of computer systems able to perform tasks that normally require human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages.



http://en.wikipedia.org/wiki/Alan_Turing



<http://www.nytimes.com/2007/09/10/science/10cnd-parrot.html>



<http://auto.howstuffworks.com/car-driving-safety/safety-regulatory-devices/red-light-camera1.htm>



<http://www.google.com/about/careers/lifeatgoogle/self-driving-car-test-steve-mahan.html>



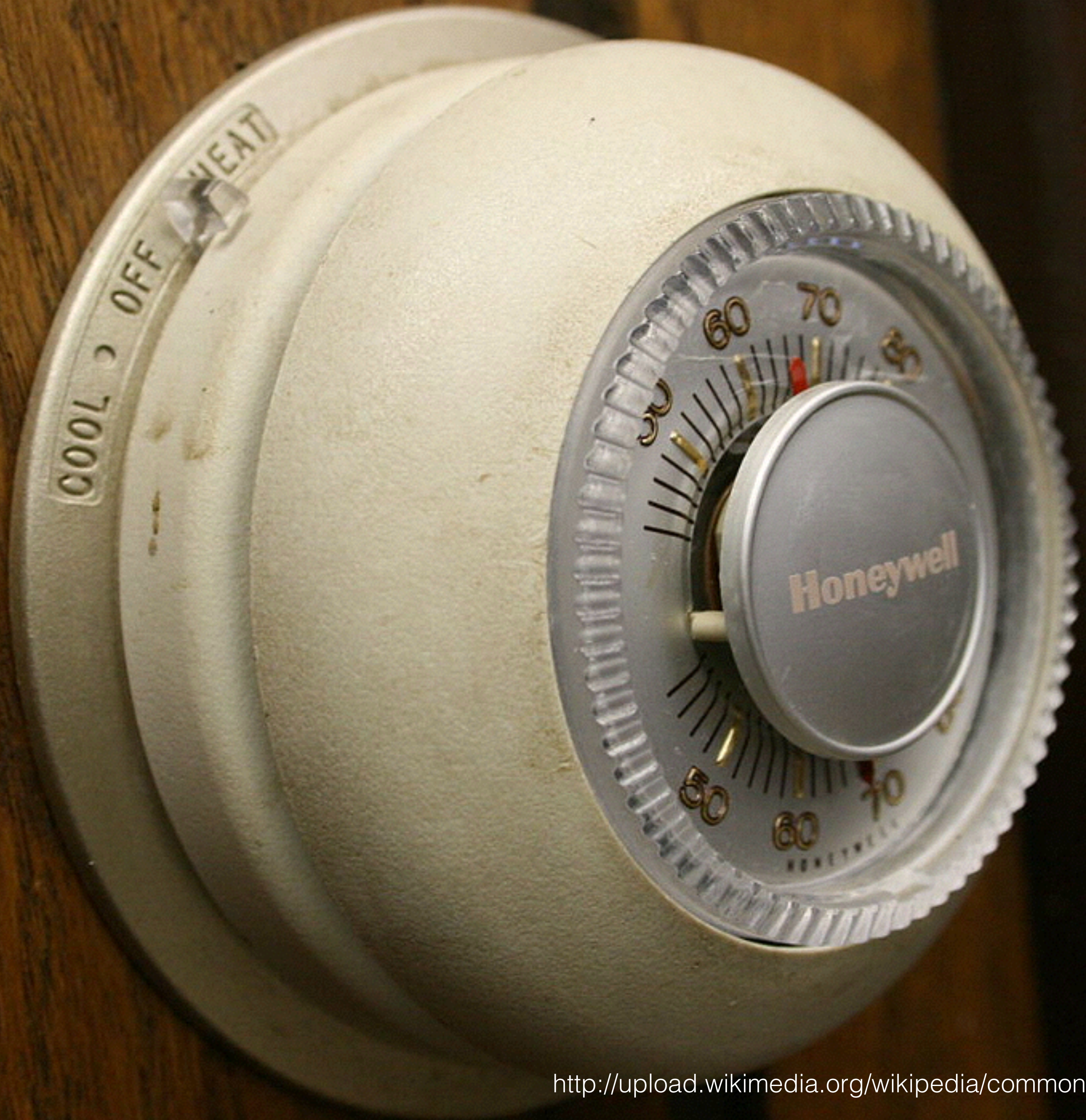
<https://www.youtube.com/watch?v=P18EdAKuC1U>

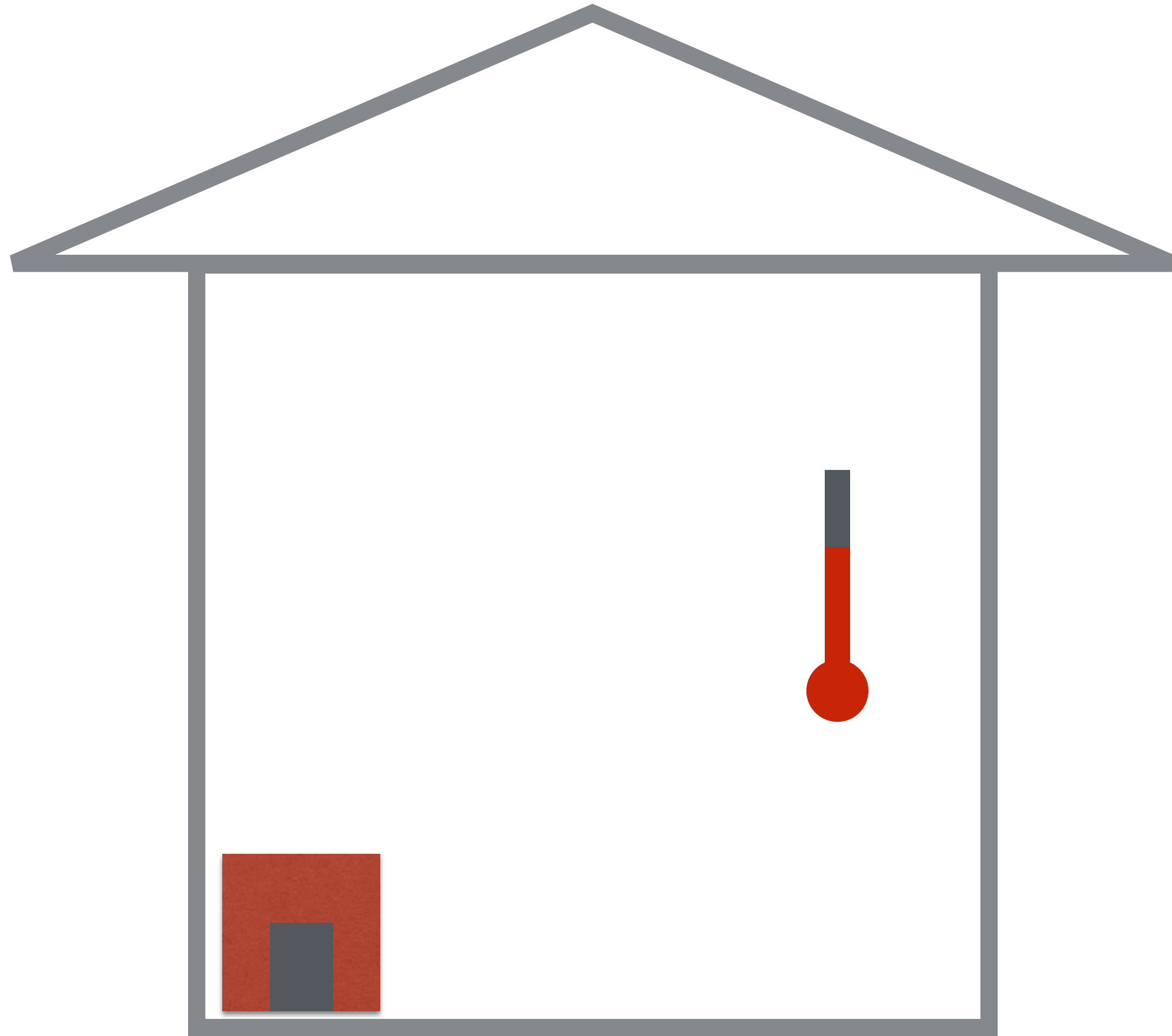


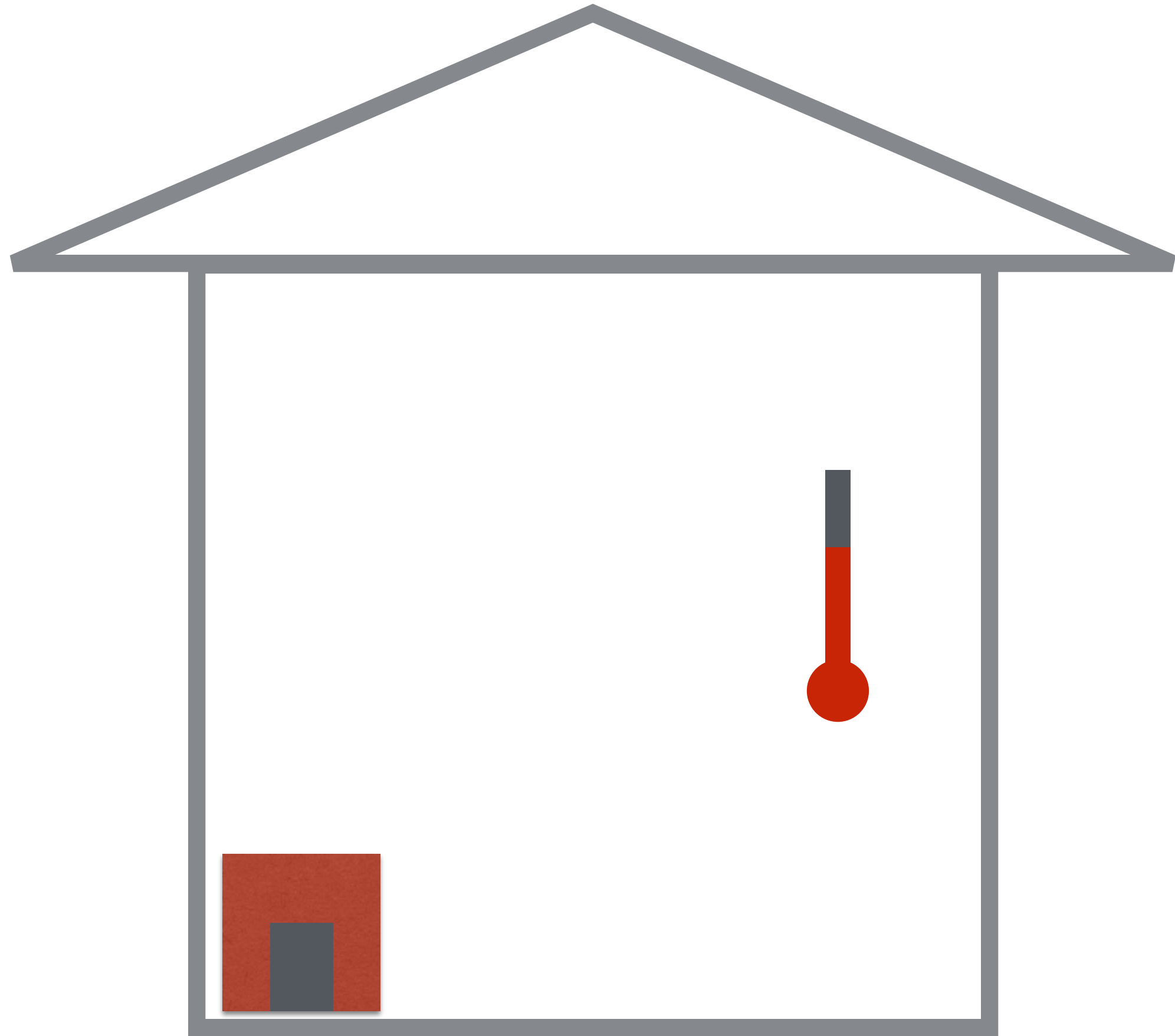
<http://www.google.com/about/careers/lifeatgoogle/self-driving-car-test-steve-mahan.html>

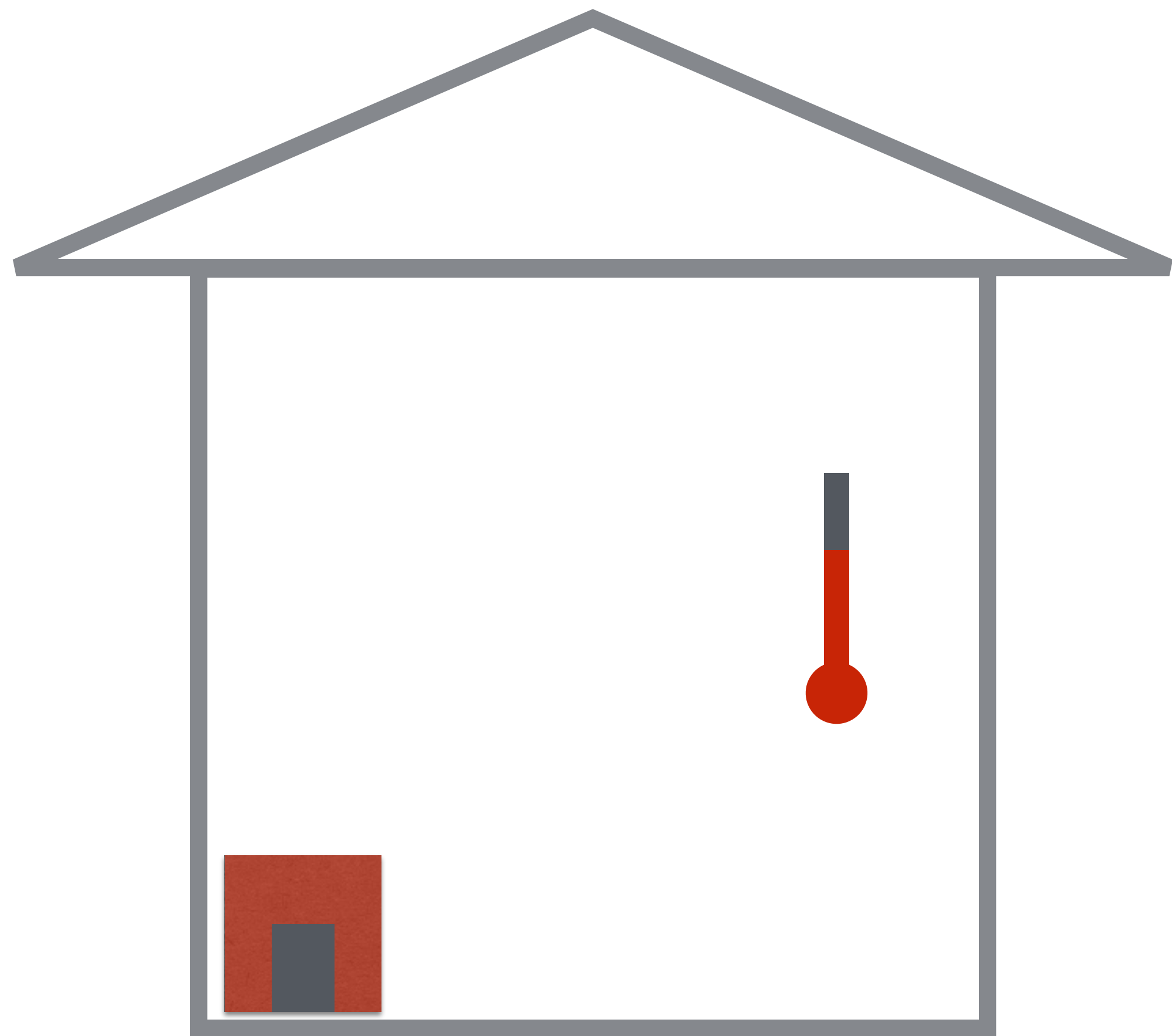


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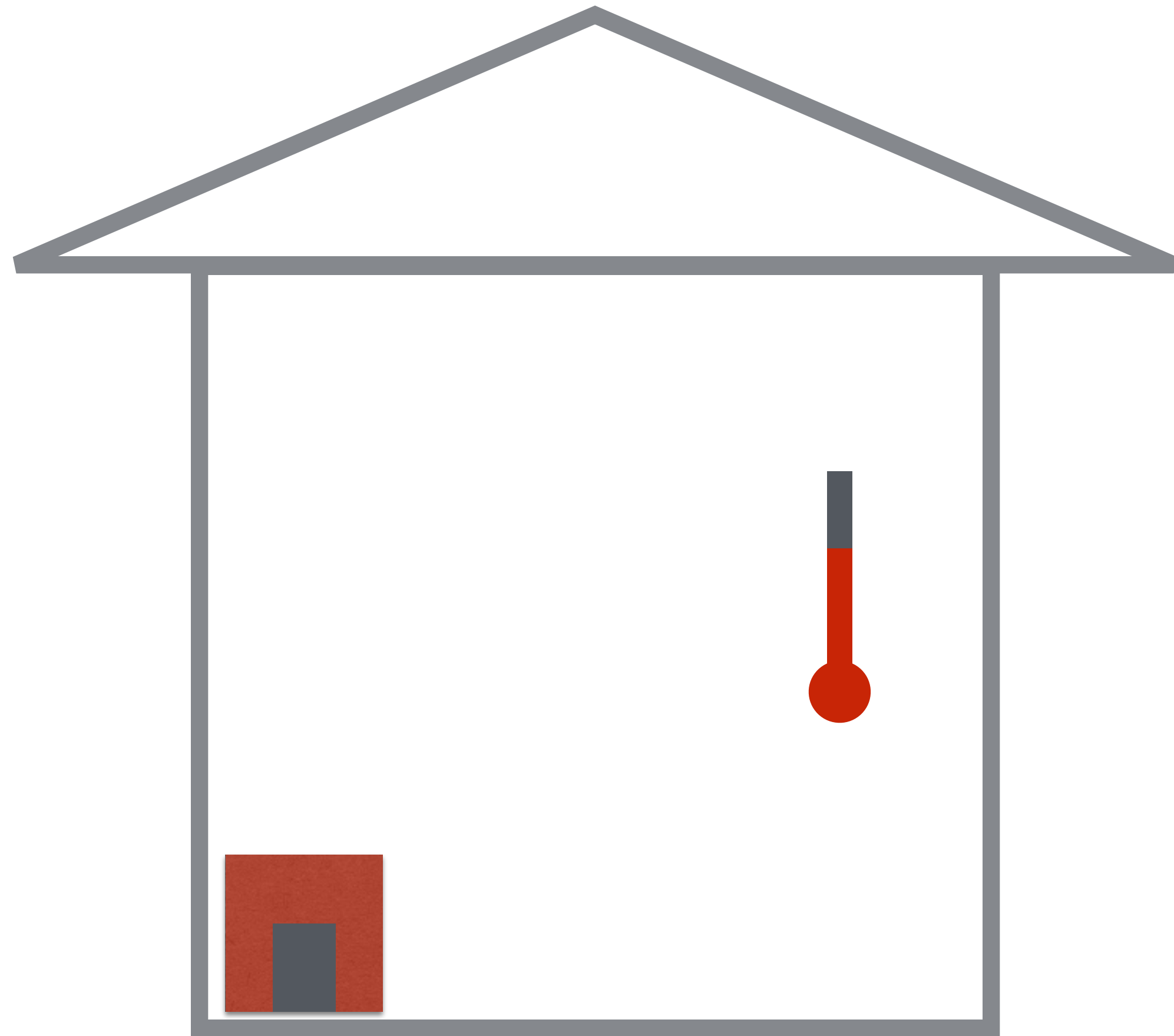








Environment



Agent



Environment

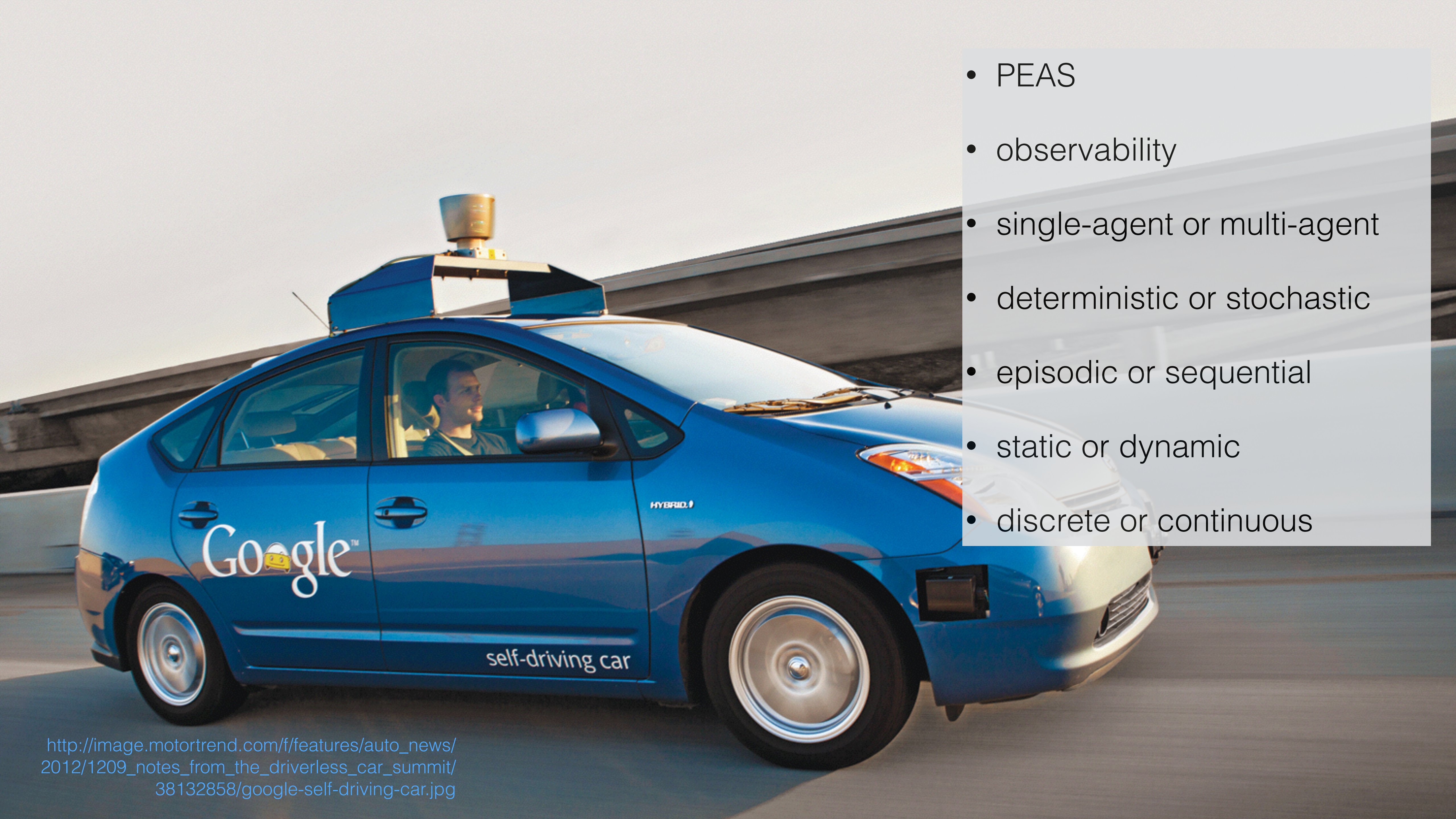
- PEAS
 - Performance measure
 - Environment
 - Actuators
 - Sensors

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 - Performance measure
 - Environment
 - observability
 - single-agent or multi-agent
 - deterministic or stochastic
 - episodic or sequential
 - static or dynamic
 - discrete or continuous
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THINK

ΣΚΕΨΟΥ

DENKE

सोचिए

PENSER

\$300,000

Who is Stoker?
(FOR ONE WELCOME OUR
NEW COMPUTER OVERLORDS)
\$1,000

\$1,000,000

Who is Bram
Stoker?
\$17,973

\$200,000

WHO IS
STOKER?
\$5600

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Agents

- Reflex agents
- Model-based agents
- Goal-based agents
- Utility-based agents
- Learning agents

Agents

- Reflex agents: direct input-output
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- Goal-based agents: want to reach goal state
- Utility-based agents: want to improve utility function
- Learning agents

Agents

- Reflex agents: direct input-output
- Model-based agents: store representation of environment
- Goal-based agents: want to reach goal state
- Utility-based agents: want to improve utility function
- Learning agents: adapt to previous experience and data



http://image.motortrend.com/f/features/auto_news/2012/1209_notes_from_the_driverless_car_summit/38132858/google-self-driving-car.jpg

PIENSE

ΣΜΑΟΜΙΣ

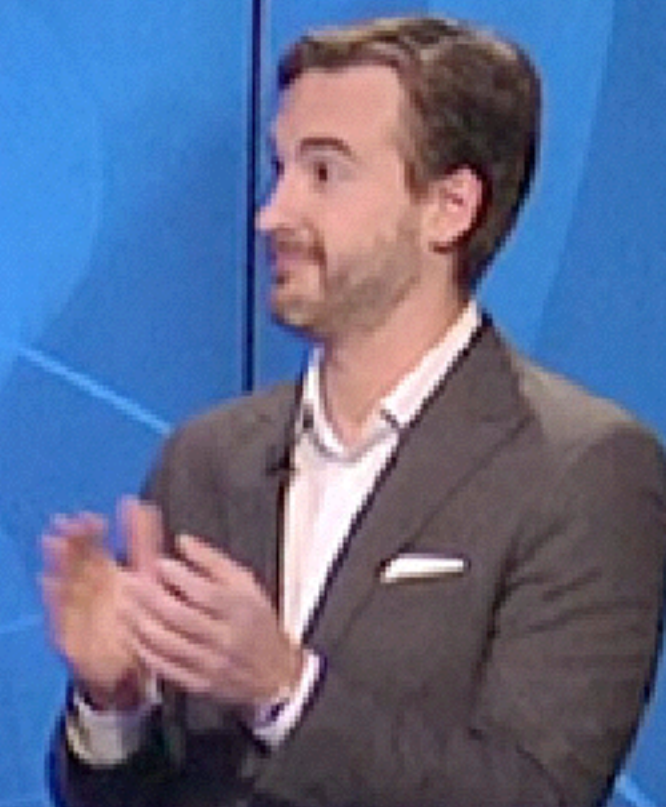
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<http://www.amazon.com/iRobot-Roomba-Vacuum-Cleaning-Allergies/dp/B005GK3IVW>