



## **L3: THE MOVING SPOTLIGHT THEORY**

# THE MOVING SPOTLIGHT THEORY

---



# THE MOVING SPOTLIGHT THEORY

There are three goals for this lecture:

1. Articulate the moving spotlight theory (MST)
2. Present arguments in support of MST
3. Present objections to MST

# THE MOVING SPOTLIGHT THEORY

---

The theory



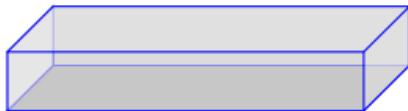
# THE MOVING SPOTLIGHT THEORY

MST consists of three theses:

1. The **eternalist view** that it is always the case that everything exists eternally (an event's position in time does not determine whether that event exists)
2. The **A-theory**: there is some instant of time that absolutely (non-relatively) present
3. The **property-change dynamic theory of temporal passage**: which event is present changes

| Theory           | Ontology        | A-theory or B-theory | Passage / Change    |
|------------------|-----------------|----------------------|---------------------|
| Moving spotlight | Eternalist      | A-theory             | Dynamic property    |
| Eternalism       | Eternalist      | B-theory             | Static              |
| Presentism       | Presentist      | A-theory             | Dynamic ontological |
| Growing Block    | Past-presentist | A-theory             | Dynamic ontological |

# THE MOVING SPOTLIGHT THEORY



MST contends accepts the **eternalist view on temporal ontology**:

- It is always the case that everything that exists does so eternally
- Dinosaurs are real
- Humans living on Proxima Centauri b is real
- What you are doing as you are reading this slide is real

# THE MOVING SPOTLIGHT THEORY

MST also accepts the **A-theory**:

- There is some instant of time that is absolutely (non-relatively) present.
- While every time exists, one time is **the present moment**
- Since there is a present moment, then there is also a past and future.





# THE MOVING SPOTLIGHT THEORY

- There is no time without change. Technically, we could imagine **time passing** without any change (a frozen world) but this would be the same as a time **not passing** without any change.
- For this reason, we explain the passage of time in terms of **the existence of change**: If there is no change, then there is no passage of time. If there is a passing of time, then there is change.
- So what **changes** according to MST?

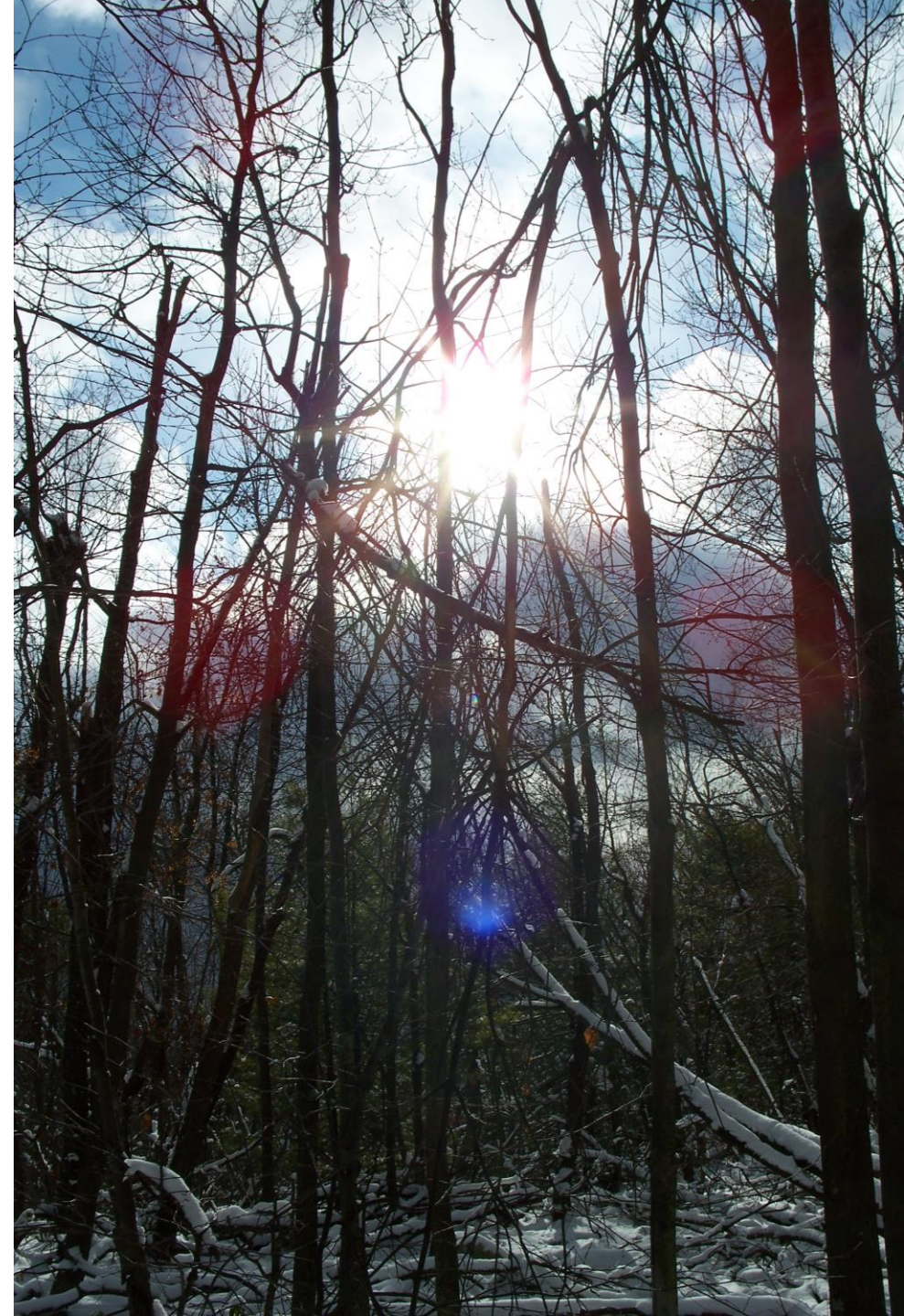




# THE MOVING SPOTLIGHT THEORY

MST contends accepts the **property change dynamic theory of temporal passage.**

- So what changes according to MST?
- According to MST: what changes is the events gain and lose the property of **being present.**
- Time passes because an event (E1) *is present*, then E1 is not present.
- This means that events / times have **temporary properties**



# PROPERTIES

---





# THE MOVING SPOTLIGHT THEORY

- Properties are typically divided into two types: **intrinsic properties** and **relational properties**
- An **intrinsic property** of X is a property X has in virtue of what X is
- A **relational property** of X is a property X has in virtue of something else.



# THE MOVING SPOTLIGHT THEORY

Tek has many **intrinsic properties**:

- Tek has mass
- Tek has height
- Tek has brown eyes
- Tek has a heart
- Tek has skin
- Tek has a soul (maybe)





# THE MOVING SPOTLIGHT THEORY

Tek has many **relational properties**:

- Tek loves Liz
- Tek is 5,000 meters away from Liz
- Tek is younger than Liz
- Tek owns a car
- Tek is the employee of company XYZ
- Tek is angry at Jon



# THE MOVING SPOTLIGHT THEORY

Intrinsic and relational properties can either be:

- Temporary
- Permanent



# THE MOVING SPOTLIGHT THEORY

- A **temporary property** is a property that an object / event can gain or lose.





# THE MOVING SPOTLIGHT THEORY

- There are **temporary relational properties**.
- These are temporary properties an object has but only relation to something else.
- **Example:** Suppose Tek is sitting in a chair. Tek has the property of *sitting in a chair*. Now suppose Tek stands up. Tek no longer has the property of *sitting in a chair*. Tek lost the property *sitting in a chair*





# THE MOVING SPOTLIGHT THEORY

- There are **temporary intrinsic properties**.
- These are temporary properties an object has in virtue of itself
- **Example:** Suppose Tek is 5'10. Now suppose that Tek grows an inch. Tek is now 5'11. Tek's height is a temporary intrinsic property. He can grow or shrink.



# THE MOVING SPOTLIGHT THEORY

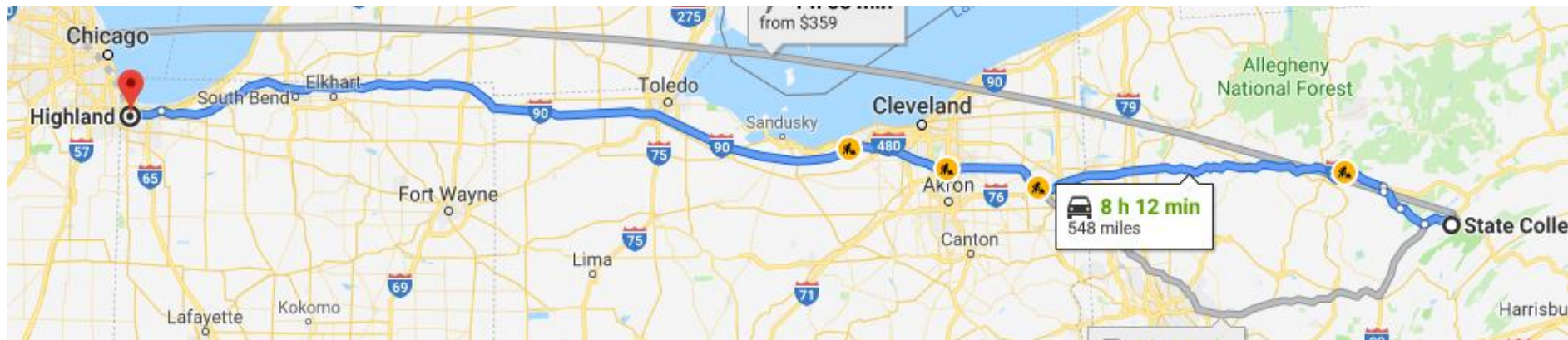
- A **permanent property** is a property that something has eternally.





# THE MOVING SPOTLIGHT THEORY

- There are **permanent relational properties**
- These are permanent properties that an object has in relation to something else.
- **Example:** Take an instant of time:  $t_1$ . At  $t_1$ , Tek is 501 miles away from Tek's true love. At  $t_1$ , Tek will **always** be 501 miles away from Tek's true love.
- This property never changes because Tek always has that property at that time.



# THE MOVING SPOTLIGHT THEORY



There are **permanent intrinsic properties**

- **Example:** Take an instant of time:  $t_1$ . At  $t_1$ , Tek is 5'10. At  $t_1$ , Tek will **always** be 5'10.
- This property never changes because Tek always has that property at that time.

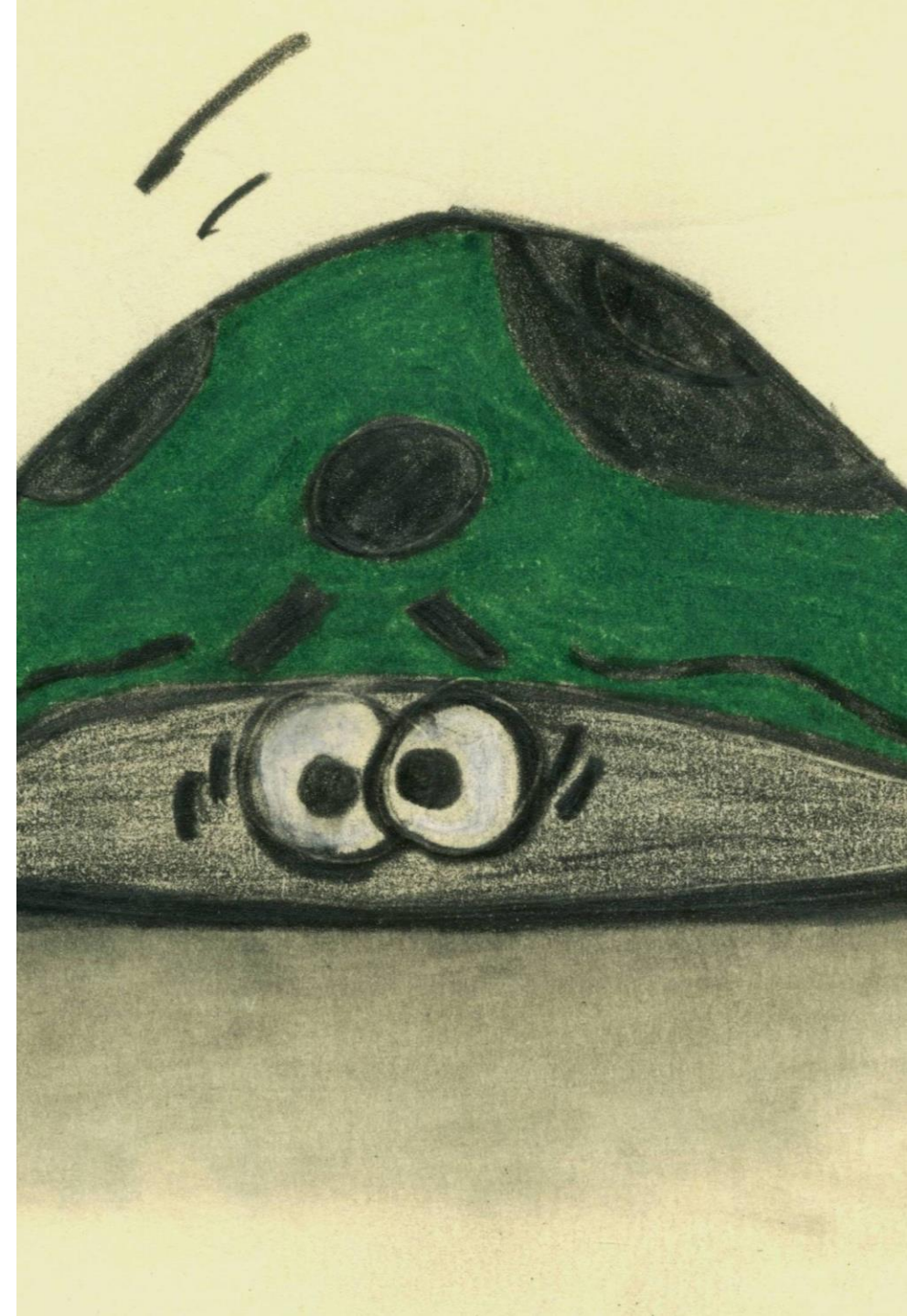


# QUESTION

There are:

1. Temporary intrinsic properties
2. Temporary relational properties
3. Permanent intrinsic properties
4. Permanent relational properties

Define and give an example of each



# CHANGE IN MST

---



# THE MOVING SPOTLIGHT THEORY

MST gets its name from its claim that only property that changes is the property of **being present**. The present is taken to be like a moving spotlight highlighting a successive set of events.

"We are naturally tempted to regard the history of the world as existing eternally in a certain order of events. Along this, and in a fixed direction, we imagine the characteristic presentness as moving, **somewhat like the spot of light from a policeman's bull's-eye traversing the fronts of the houses in a street**. What is illuminated is the present, what has been illuminated is the past, and what has not yet been illuminated is the future."

- C. D. Broad (1923:59), my emphasis

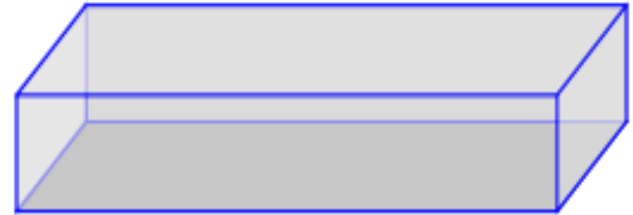


# THE MOVING SPOTLIGHT THEORY

Concerning change, MST says

1. There is **no ontological change**: there is no change as to what exists. If 50 things exist, then these things always exist (no new things added, no things removed).
2. **All properties are permanent except one**. If you were tall in 2018, you will always be tall in 2018.

The **only change** that occurs are events gaining or losing the **temporary intrinsic property of being present** (or being past or being future)





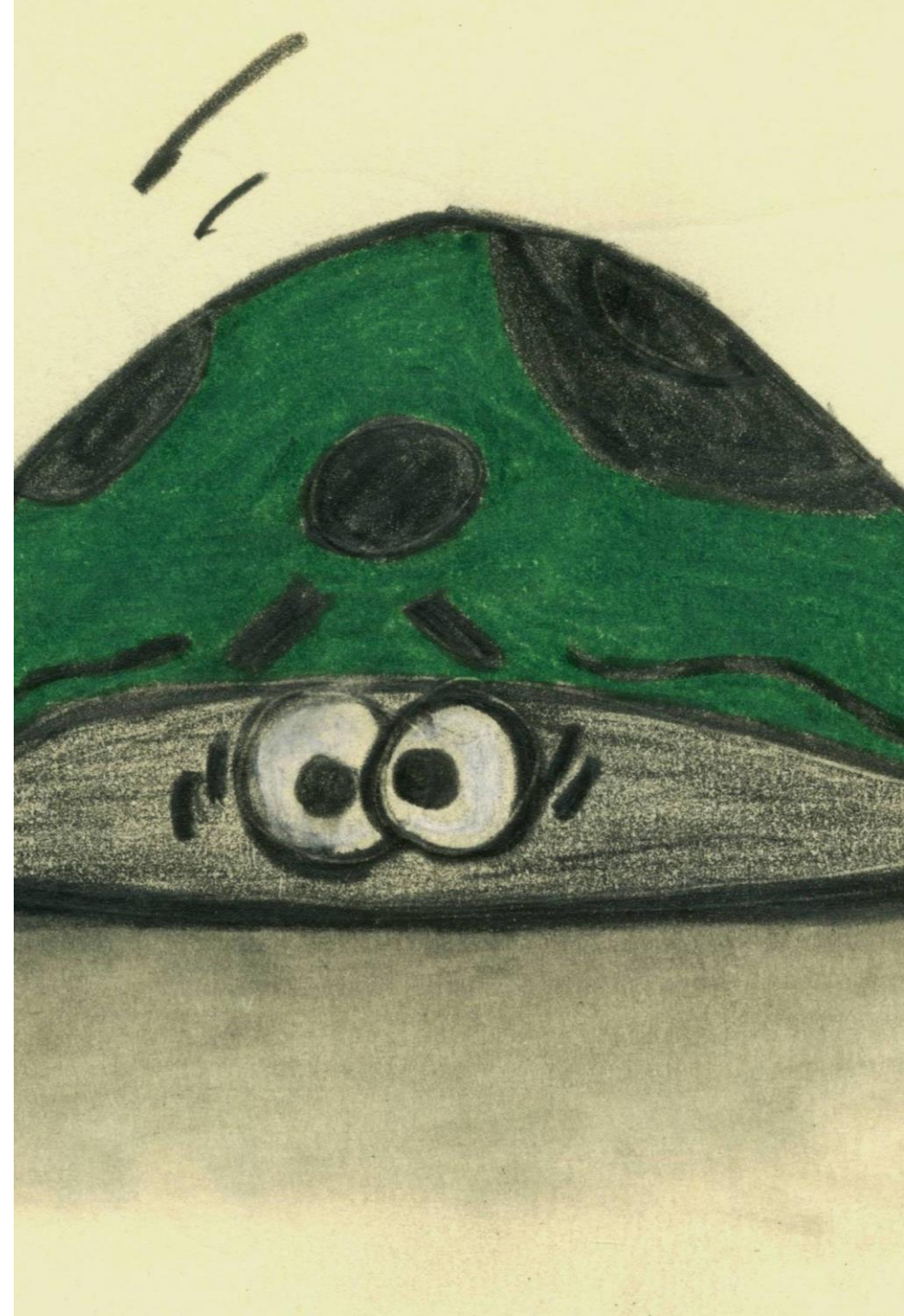
# THE MOVING SPOTLIGHT THEORY

"there is genuine change in which moment is present. But notice that the spotlight theorist **does not admit genuine change for anything else!** For her there is no genuine change in whether I am sitting, or in whether there are dinosaurs, or whether a war is occurring, since her account of these matters is identical to the spatializers"

- Sider, *Writing the Book of the World*, 2011 (my emphasis)

# QUESTION

1. Articulate the moving-spotlight theory the best you can to your neighbor.
2. What are its three central claims?
3. What type of property does it say *being present* is (e.g. temporary relational)?



# ARGUMENTS FOR MST

---





Rare for there to be a single knock-down argument in support of a theory



Theories are evaluated against the **weight** of arguments and evidence



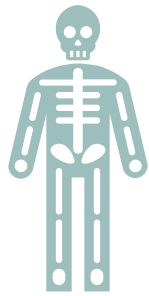
An argument that is used to support one theory might equally support another theory



Rhetorically, arguments for theories will be presented as though they are knockdown arguments

## PRELIMINARY TO ARGUMENTS FOR MST





**Argument from Intuitions:** Fits with our intuitions that (1) there is something special about the present and (2) temporal passage is real



**Truthmaking argument:** Explains how past-tense sentences can be true



**Argument from past and future relations:**  
Explains how we can have relations to the past

# THREE ARGUMENTS FOR MST

# ARGUMENT FROM INTUITIONS

## Argument

**P1:** There is a past, present, and future (intuition 1), this intuition is rational (intuition 2), something metaphysically special about the present moment (Intuition 3) and temporal passage is objectively real, viz., not perspectival (Intuition 4).

**P2:** We ought to select a theory that best accords with our **intuitions** about time.

**P3:** MST best explains intuitions (1)-(4) by positing the existing of the past, present, and future (intuitions 1 - 2), by positing that there is a temporary intrinsic property of *being present* that events take (intuition 3), and by explaining temporal passage by through the gain and loss of *being present* (intuition 4)

**C:** Therefore, MST is true.

## Evaluation

1. Evaluate the argument for MST from intuitions.
2. Is the argument convincing?
3. If not, which premise is false?



# ARGUMENT FROM INTUITIONS

Potential problems:

1. Need to show why other theories cannot explain the intuitions
2. Why we ought to accept the **validity of these intuitions** relative to other considerations (maybe our intuitions are wrong in light of other evidence).

# TRUTHMAKING ARGUMENT

## Argument

P1: The truth of past-tense sentences requires truthmakers (e.g. "George Washington did X" requires something that makes the sentence true).

P2: The best candidate for truthmakers for past-tense sentences are past events (or past objects)

P3: MST posits the reality of past events (or past objects)

P4: MST can thus best account for the truthmakers needed for the truth of past-tense sentences.

C: MST is true.

## Evaluation

1. **P2 is false.** Not clear that there needs to be past-objects or past-events to account for the truth of past-tense sentences. You could use present events and the laws of nature. "X is true iff what exists now along with the laws of nature is consistent with X having been true"
2. **P4 is false.** Other theories can equally account for the truthmakers needed for **past-tense sentences** (e.g. Eternalism, Growing Block theory) and future tense sentence (Eternalism). There appears to be no relative advantage of MST over its rivals (besides presentism)



# TRUTHMAKING ARGUMENT

## Needed

- MST needs to show why **we must posit the existence of past-objects** to make sense of truth-making (it needs to show the presentist alternative doesn't work).
- It also needs to show why its **account of truthmaking** is preferable to the Eternalist or GBT. Not clear if this is possible.

# ARGUMENT FROM PAST (AND FUTURE) RELATIONS

## Argument

P1: For some relations, the relation cannot hold unless both objects exist

P2: There are some such relations of present objects to past objects (e.g. a **window breaking** to a **brick being thrown at it** or the love Tek's admiration of Newton) and to future objects (e.g. Tek's love for my unborn child or Tek's hope for the future).

P3: MST best explains these facts in virtue of positing past, present, and future objects along with the property of *being present*.

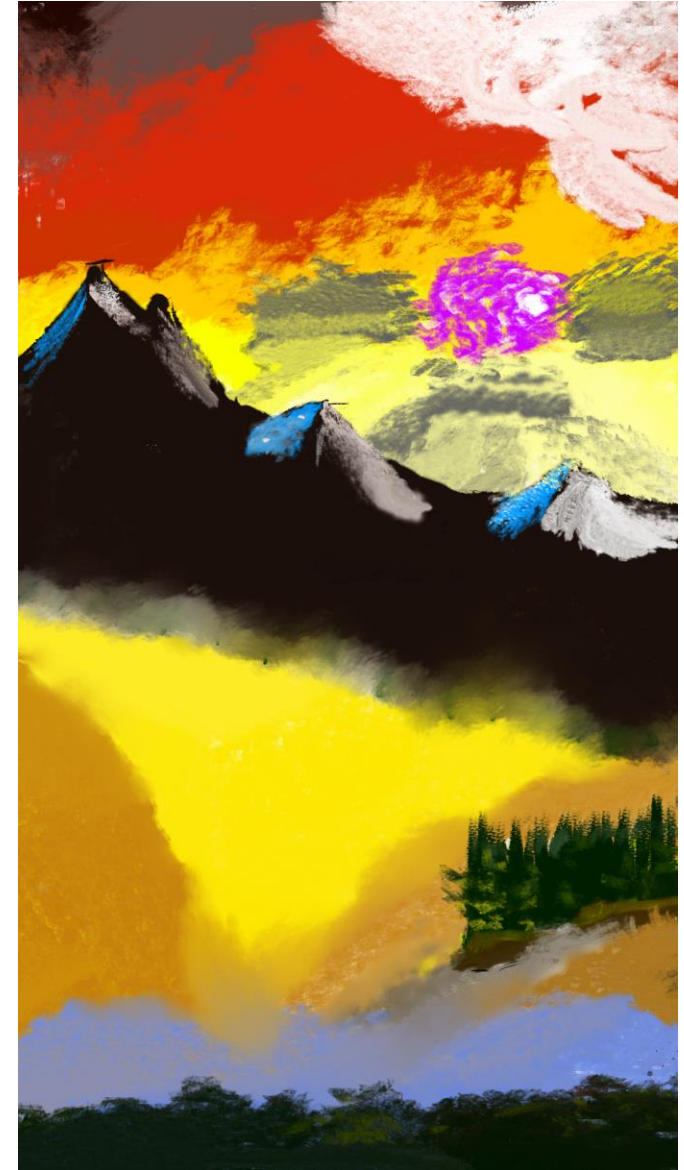
C: Therefore, MST is true.

## Evaluation

1. **P3 is false.** Eternalism can explain these facts by positing earlier than later than relations: Tek's love for his future child is a love for an entity that exists later than Tek (no need for the present).
2. **P3 is false.** The growing block theory can account for present-past relations in the same way – although it cannot account for future events.
3. **P2 is false.** This view is controversial. Perhaps Tek can account for his relation to his beloved without positing a past object – Love for the work of Newton (which still exists).

# THE COMPOSITE ARGUMENT FOR MST

- **We might think about developing a special composite argument.** This is an argument that combines all three of the arguments that we have considered.
- The idea then is that no one argument for MST is a terribly convincing or unproblematic
- But all of the arguments **together** make a case for MST
- The arguments together have a property that the arguments separately lack.



# THE COMPOSITE ARGUMENT FOR MST

## Remember

We evaluate a theory in light of **all of the evidence** and pick the one that has a relative advantage over other theories.

| Theory           | Intuitions | Past-tense | Past-and-future-relations |
|------------------|------------|------------|---------------------------|
| Moving spotlight | ✓          | ✓          | ✓                         |
| Eternalism       |            | ✓          | ✓                         |
| Presentism       |            |            |                           |
| Growing Block    |            | ✓          |                           |



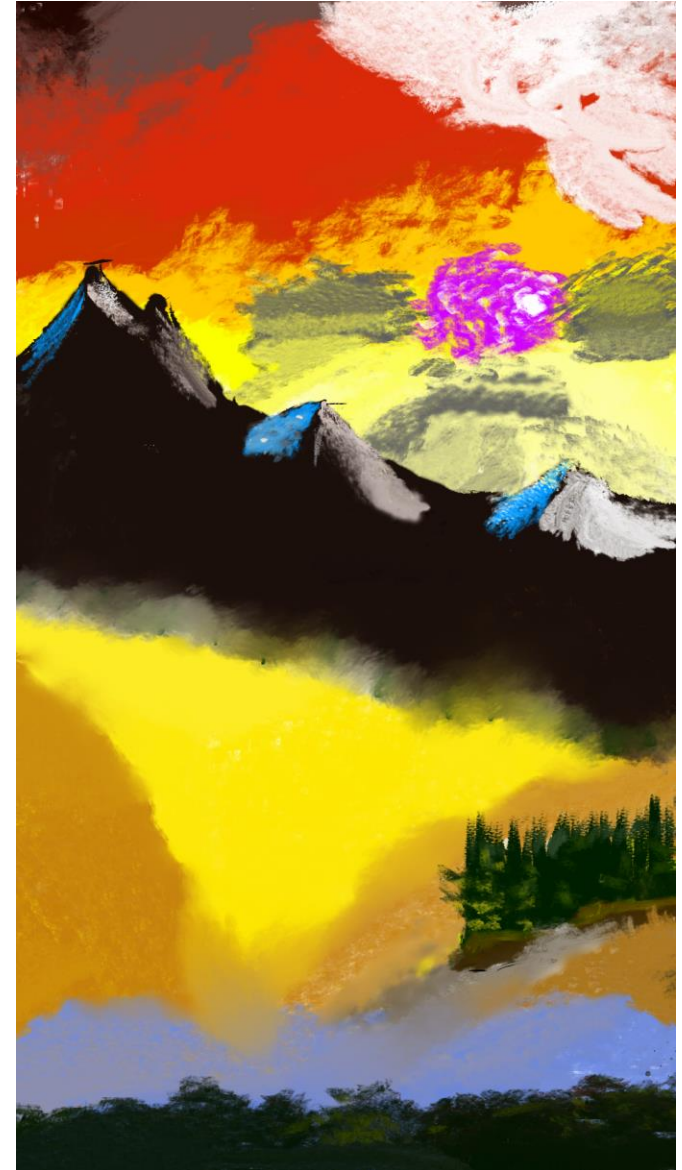
# THE COMPOSITE ARGUMENT FOR MST

**P1:** A theory of time ought to explain (a) all of our intuitions (b) truthmakers for past-tense sentences, and (c) our relations to past objects.

**P2:** MST does the best job of explaining or "fitting" (a)-(c)

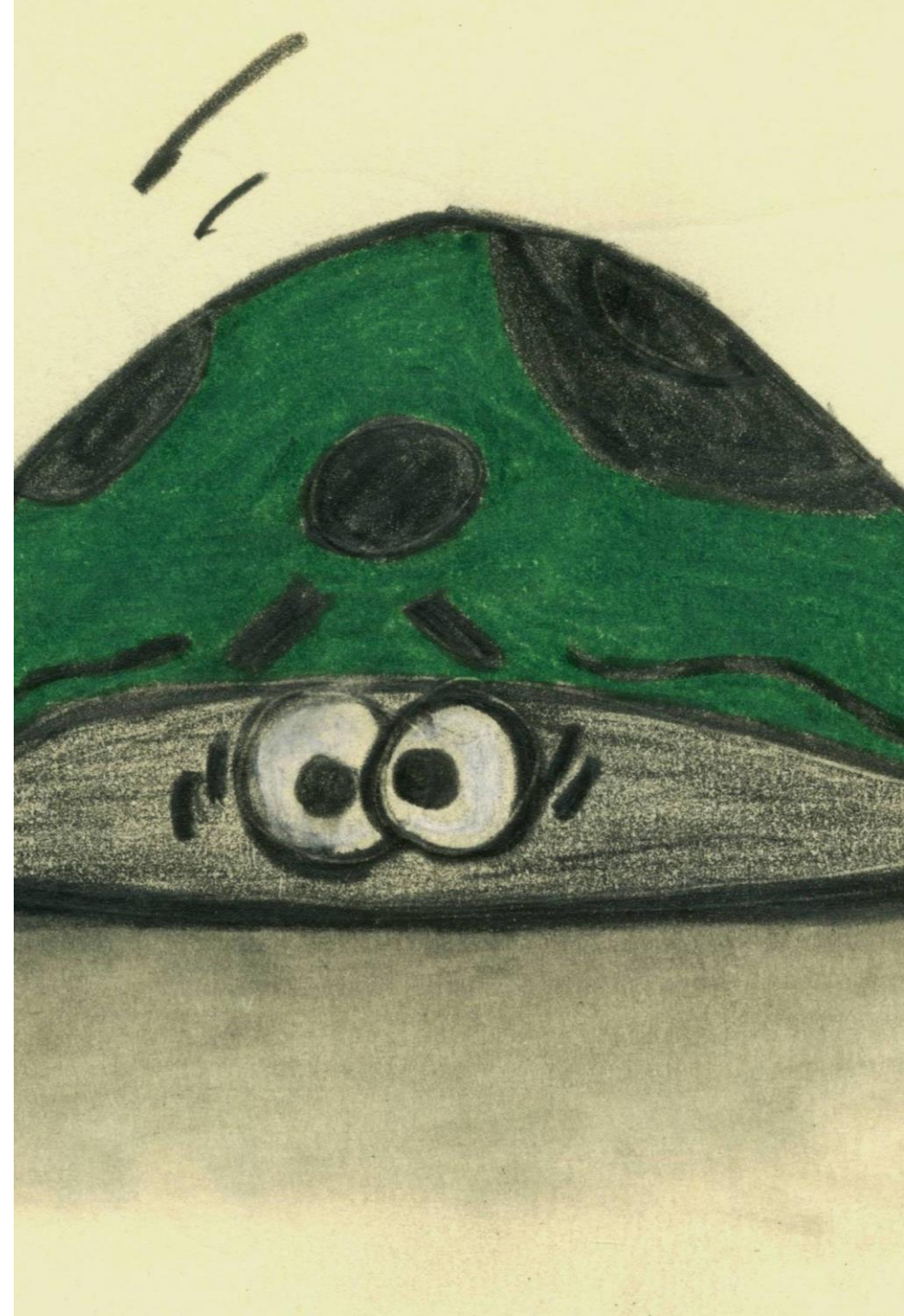
**P3:** We ought to select a theory that best fits with (a)-(c).

**C:** Therefore, MST is true.



# QUESTION

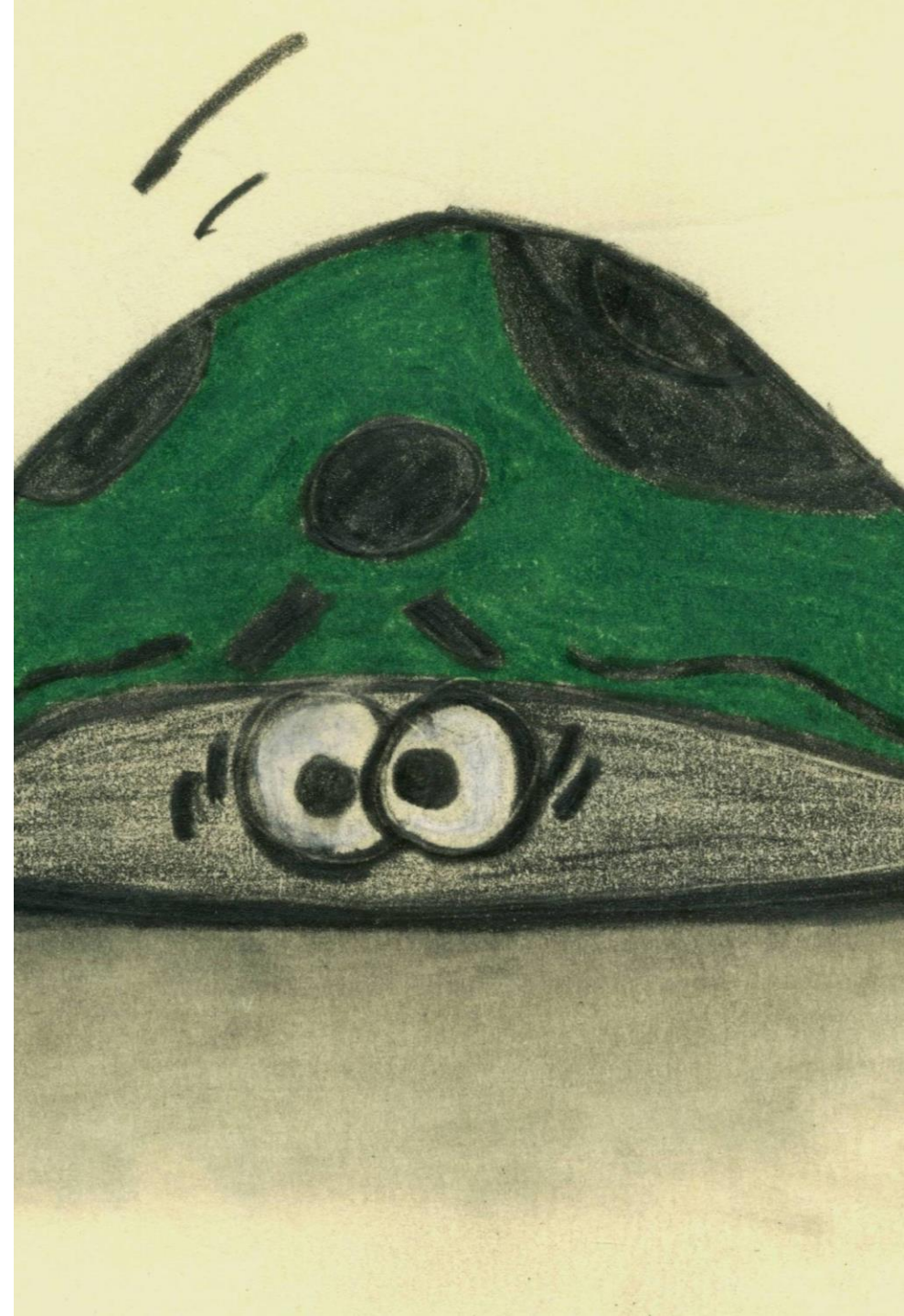
1. In your own words, articulate each of the three arguments in support of MST (we'll ignore the composite argument).
2. In your own words, articulate at least one problem for each of the arguments that aim to support MST.
3. Which of the three arguments do you find most convincing (if any) and why?
4. If you had to create another argument to support MST, what would it be?





# QUESTION

1. Pick one of the arguments for MST.
2. Write that argument on the board in your own words
3. Illustrate that argument with a drawing, picture, diagram, etc.



# ARGUMENTS AGAINST MST

---

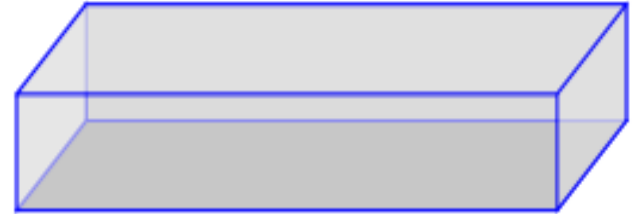




# THE MOVING SPOTLIGHT THEORY

We consider **three** arguments **against** MST:

1. The epistemic argument
2. The open-future argument
3. McTaggart's paradox



# THE EPISTEMIC ARGUMENT

## Argument

P1: If MST is true, then multiple times exist.

P2: If multiple times exist, then there is no way to know one is in the present (how would one know the spotlight is on you rather than not on you)

P3: It is counterintuitive (against intuitions) to contend that there is a present moment and absolutely no way to know one is in the present.

P4: A theory ought to accord with our epistemic intuitions about the present.

P5: MST does not accord with our epistemic intuitions about the present.

C: Therefore, MST is not true.

## Explanation

**P2:** Recall that MST says that all properties in time are static except the property of *being present*

**P3-P5:** This seems important for any A-theory. One motivation for thinking there is a present (metaphysically special) is because we *believe ourselves to experience the present*.

# THE EPISTEMIC ARGUMENT

## Argument

P1: If MST is true, then multiple times exist.

P2: If multiple times exist, then there is no way to know one is in the present (how would one know the spotlight is on you rather than not on you)

P3: It is counterintuitive (against intuitions) to contend that there is a present moment and absolutely no way to know one is in the present.

P4: A theory ought to accord with our epistemic intuitions about the present.

P5: MST does not accord with our epistemic intuitions about the present.

C: Therefore, MST is not true.

## Evaluation

*What do you think of the epistemic argument against MST?*



# THE EPISTEMIC ARGUMENT

## Argument

P1: If MST is true, then multiple times exist.

P2: If multiple times exist, then there is no way to know one is in the present (how would one know the spotlight is on you rather than not on you)

P3: It is counterintuitive (against intuitions) to contend that there is absolutely no way to know one is in the present.

P4: A theory ought to accord with our epistemic intuitions about the present.

P5: MST does not accord with our epistemic intuitions about the present.

C: Therefore, MST is not true.

## Response

One response might be that **even if the argument is legitimate**, it also effects the growing block theory (how does one know one is on the edge (latest slice) of the block?)



# THE OPEN FUTURE ARGUMENT

## Argument

- P1: Intuitively the future and the past are **different**. There is one way for the present and past to be but many ways for the future to be (open future premise). *The future is unfixed* but the *past is fixed*.
- P2: Theories like the growing block theory (GBT) and presentism preserve the fact that the future is open: there is an ontological difference between the present and the future (one exists and one doesn't)
- P3: MST does not preserve the fact that the future is open as future events already exist.
- C: Therefore, GBT and presentism are preferable to MST.

## Explanation

- P1 is the intuition that the future is unsettled, does not exist, is yet to be.
  - Supported by our **epistemic asymmetry**: I know certain past facts but don't know any future facts
  - Supported by **attitudinal asymmetry**: I prepare for future events but not past events

# THE OPEN FUTURE ARGUMENT

## Argument

- P1: Intuitively the future and the past are different. There is one way for the present and past to be but many ways for the future to be (open future premise).
- P2: Theories like the growing block theory (GBT) and presentism preserve the fact that the future is open: there is an ontological difference between the present and the future (one exists and one doesn't)
- P3: MST does not preserve the fact that the future is open as future events already exist.
- C: Therefore, GBT and presentism are preferable to MST.

## Evaluation

- What do you think of this argument?
- Do you think a theory of time needs to accommodate P1 or is it not critical?



# MCTAGGART'S PARADOX

P1: If MST is true, then the passage of time involves change in what events possess the properties of *being past (P)*, *being present (N)*, and *being future (F)*.

P2: No event E is P, N, F (incompatible properties)

P3: Suppose event E is F.

P4: Suppose time passes (as MST says it does) and E becomes N, and then becomes P.

P4: Therefore, E is P, N, F. **Contradiction with line 2.**

C: Therefore, MST is false.

# MCTAGGART'S PARADOX

Example: Suppose we are in 2019 and there is an event in 2020 – maybe a new year's day party (call it E).

- In the present, **E is future (F)**
- A year passes: **E is present (N)**
- Another year passes: **E is past (P)**
- An event E cannot be F AND N AND P.

# MCTAGGART'S PARADOX

## Response: NO WAY!

- It is not the case that E is P, N, F
- It is not the case that E is future **AND** E is present **AND** E is past.
- E possesses being P, being N and being F **successively** not at the same time (E possesses P, N, F at different times)



# MCTAGGART'S PARADOX

## Response: NO WAY!

- Remove the "contradiction" by **adding TENSE**:
- If **E is present** then, E **was** future, E **is** present, and E **will be** past. No contradiction!
- If **E is future**, then E **is** future, E **will be** present, and then E **will be** past. No contradiction!
- If **E is past**, then E **is** past, E **was** present, and E **was** future.

No contradiction!

# MCTAGGART'S PARADOX

## Counter-response: WHAT? REMOVE THAT TENSE!

- The response **adds** TENSE by saying that E *was future, is present, and will be past*.
- Let's translate these TENSED properties into TENSELESS properties.
- We can **rephrase each of these properties** without past, present, or future tense:
  - E was future = **E is future** in the past
  - E is present = **E is present** in the present
  - E will be past = **E is past** in the future

# MCTAGGART'S PARADOX

Nine different second-order tenseless temporal properties:

1. *E is present*: E is N in N (present in the present)
2. *E was present*: E is N in P (present in the past)
3. *E will be present*: E is N in F (present in the future)
4. *E is past*: E is P in N (past in the present)
5. *E was past*: P in P (past in the past)
6. *E will be past*: E is P in F (past in the future)
7. *E is future*: E is F in N (future in the present)
8. *E was future*: E is F in P (future in the past)
9. *E will be future*: E is F in F (future in the future)

# MCTAGGART'S PARADOX

- As time passes, an E will come to possess all nine of these second-order properties.
- Not all of these properties conflict. There is no contradiction between:
  - 2022 is future in the present (sure in 2019, the year 2022 is future in the present), AND
  - 2022 is future in the future (sure in 2019, the year 2022 is future in the future 2020)
- But some of them do conflict
  - E cannot be **future in the present** AND **present in the present** AND **past in the present**
- So McTaggart's paradox returns all over again.

# MCTAGGART'S PARADOX

**Reply:** ADD that tense back.

- Wait, an E is never **future in the present AND present in the present AND past in the present**
- E **was** future in the present, **is** present in the present, and **will be** past in the present

**Reply to the Reply:** Woah, remove that tense.

- Rephrase the properties without tense. Contradiction reemerges.



# THE COMPOSITE ARGUMENT AGAINST MST

## Remember

We evaluate a theory in light of **all of the evidence** and pick the one that has a relative advantage over other theories.

| Theory           | Epistemic | Open future | McTaggart's paradox |
|------------------|-----------|-------------|---------------------|
| Moving spotlight | ✓         | ✓           | ✓                   |
| Eternalism       |           | ✓           |                     |
| Presentism       |           |             |                     |
| Growing Block    | ✓         | ✓           | ?                   |

# THE COMPOSITE ARGUMENT FOR MST

**P1:** For a theory to be true, it ought not to be prone to a variety of objections / problems.

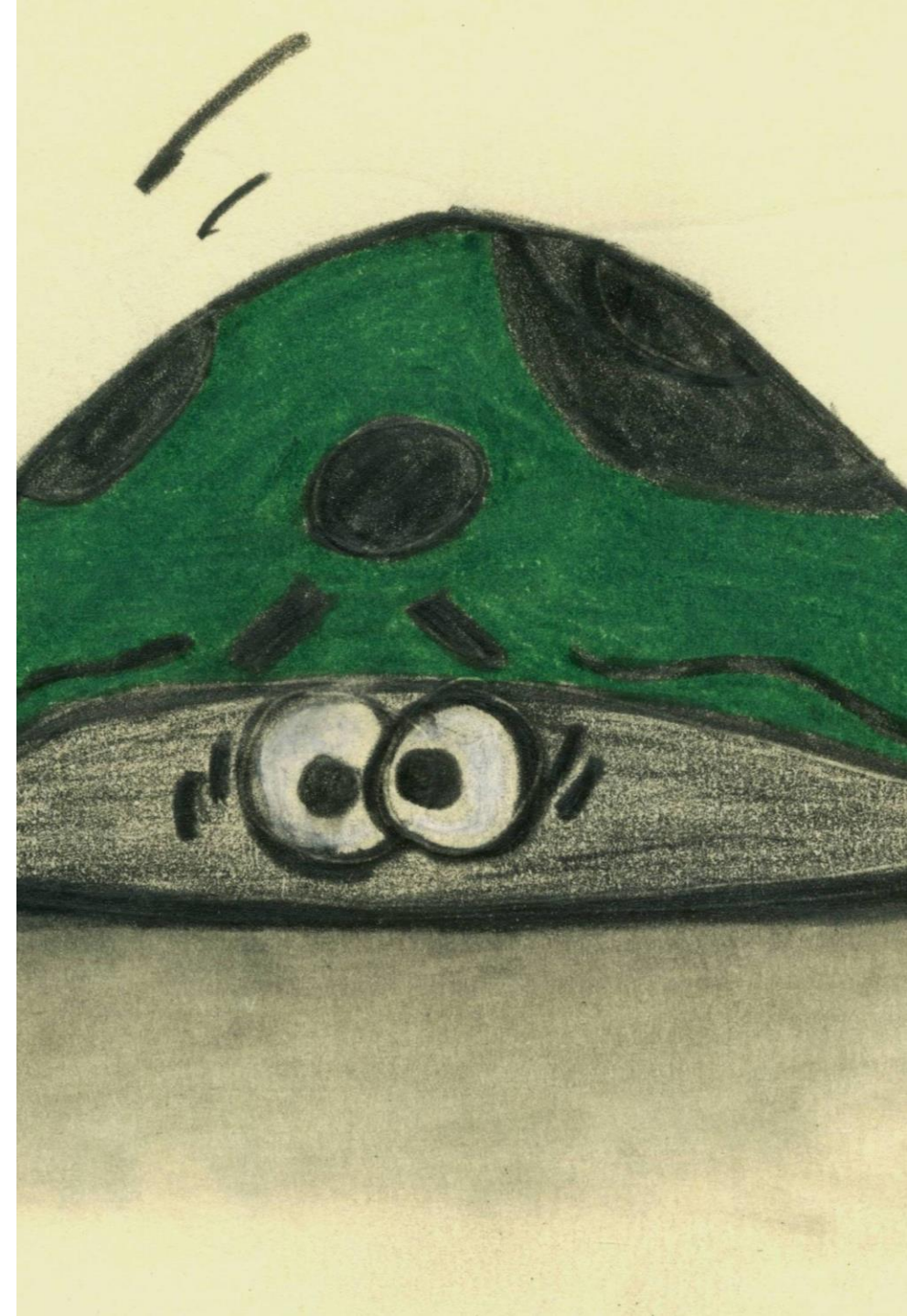
**P2:** MST is open to a variety of objections: (1) epistemic argument, (2) open future argument, (3) McTaggart's paradox

**C:** Therefore, MST is false.



# QUESTION

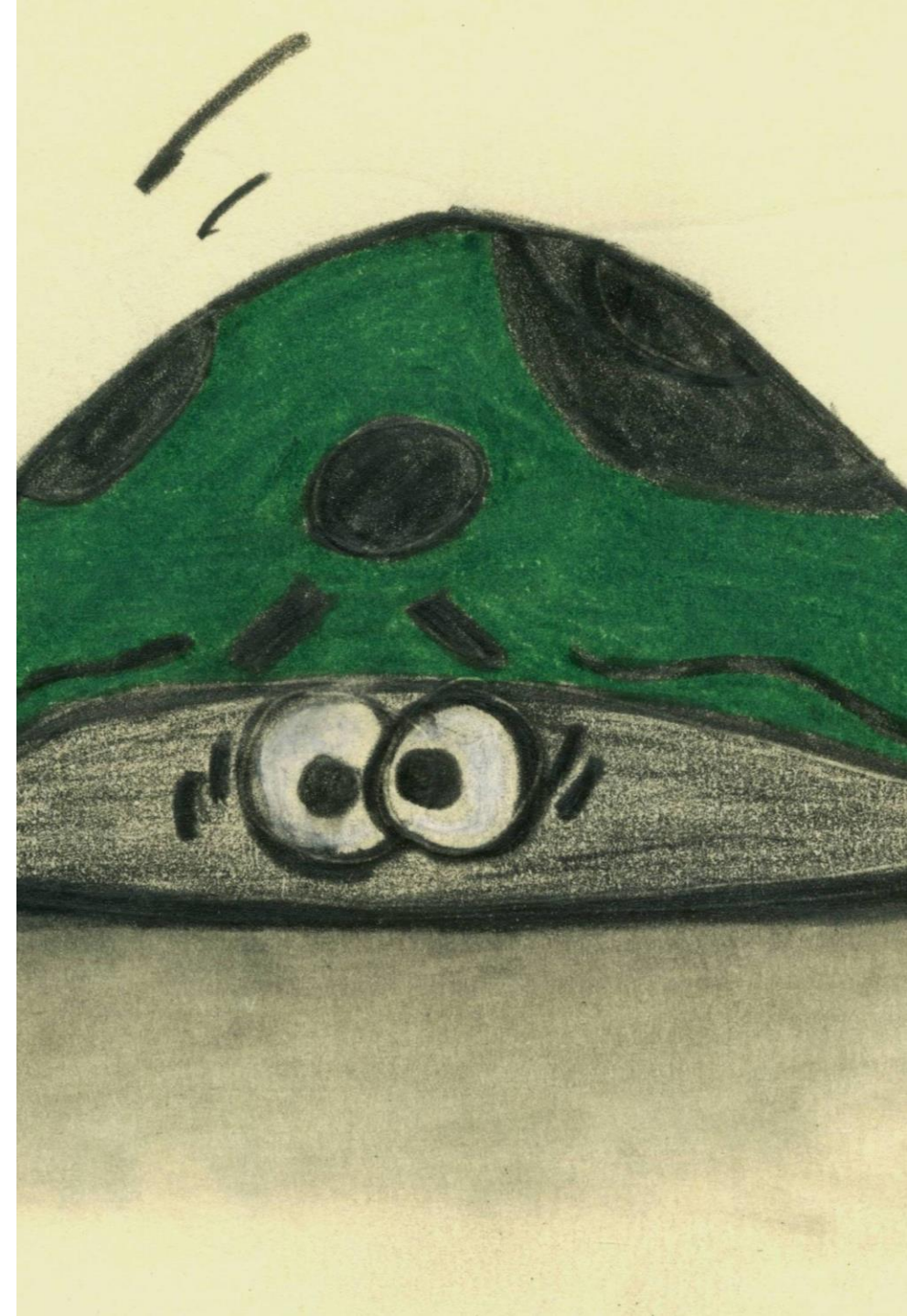
1. Pick one of the three arguments **against** MST. Articulate the argument the best you can. Finally, state one potential response to said argument.
2. We have (1) articulated MST, (2) given some arguments in support of it, and (3) offered some arguments that criticize it. First, do you think that the articulation of the theory has taken us beyond people's naïve theories of time? Second, do you think MST is persuasive?





# REVIEW QUESTIONS

1. What are the three central claims of MST?
2. What are temporary properties, permanent properties, intrinsic properties, relational properties? Give an example of each.
3. You should be able to articulate one argument in support of MST.
4. You should be able to articulate one argument against MST.
5. You should have a basic familiarity with McTaggart's paradox (which argument it is directed at and its general structure).
6. You should have a sense of the purpose of the composite arguments for and against MST. You don't need to be able to articulate them but have a sense of what they establish in the process of choosing a theory of time.



# SOURCES FOR ILLUSTRATIONS

1. Spotlight image: <http://destinationz.org/Mainframe-Solution/Systems-Administration/Out-of-the-Spotlight>
2. Dinosaur drawing: [https://en.wikipedia.org/wiki/Dinosaur#/media/File:Lambeosaurus\\_magnicristatus\\_DB.jpg](https://en.wikipedia.org/wiki/Dinosaur#/media/File:Lambeosaurus_magnicristatus_DB.jpg)



# FURTHER READING

1. *The Moving Spotlight Theory* by Ross P. Cameron. For a book review of this book, see Ted Sider's "Ross Cameron's *The Moving Spotlight*": <https://tedsider.org/papers/Cameron.pdf>