

Causal Explanation is All There is to Causation

Julian Reiss, Durham University

Aim: develop a suggestion of Michael Scriven's

Aim: develop

When we are looking for causes, we are looking for explanations in terms of a few factors or a single factor; and what counts as an explanation is whatever fills in the gap in the inquirer's or reader's understanding.

- Aim: develop a suggestion of Michael Scriven's
- Motivation: causation by absences

- Aim: develop a suggestion of Michael Scriven's
- Motivation: causation by absences
- What I offer:

- Aim: develop a suggestion of Michael Scriven's
- Motivation: causation by absences
- What I offer:
 - a theory of explanation and causal explanation,

- Aim: develop a suggestion of Michael Scriven's
- Motivation: causation by absences
- What I offer:
 - a theory of explanation and causal explanation,
 - * a theory of causation in terms of causal explanation, and

- Aim: develop a suggestion of Michael Scriven's
- Motivation: causation by absences
- What I offer:
 - a theory of explanation and causal explanation,
 - a theory of causation in terms of causal explanation, and
 - a solution to the problem of absence causation

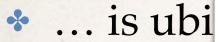
* ... is ubiquitous:

- * ... is ubiquitous:
 - in science

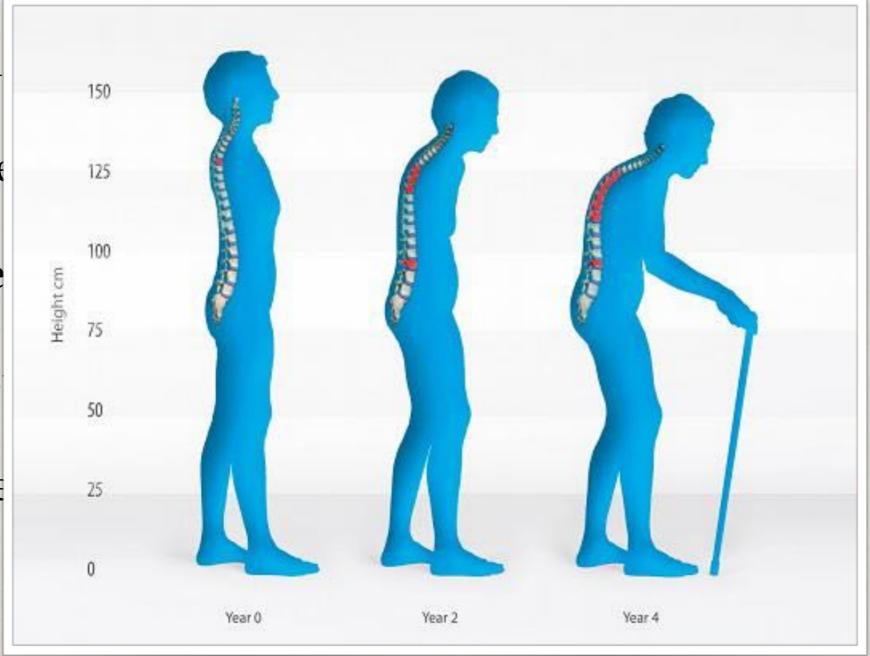
- * ... is ubiquitous:
 - in science
 - in the law

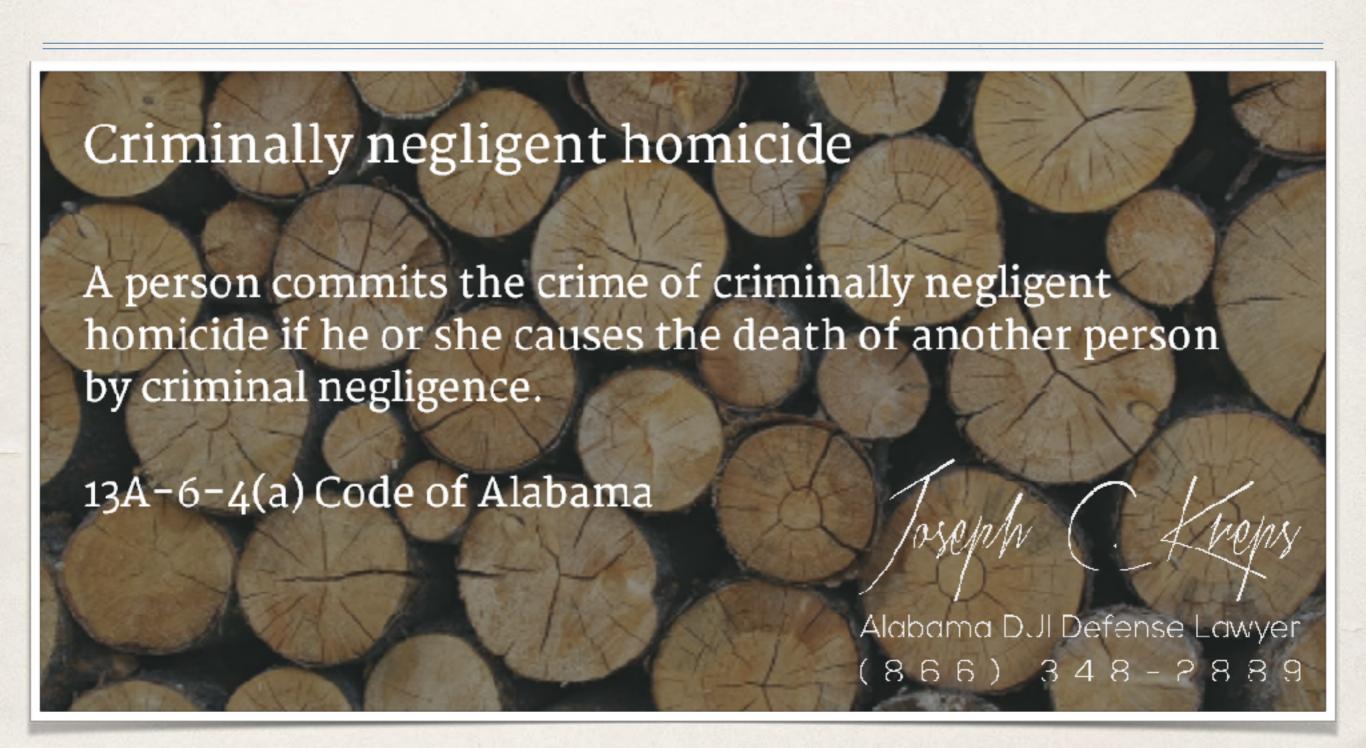
- * ... is ubiquitous:
 - in science
 - in the law
 - in history

- * ... is ubiquitous:
 - in science
 - in the law
 - in history
 - in everyday life



- in scie
- in the
- in his
- in eve





* ... is 1

* in

* in

* in

in



- * ... is ubiquito
 - in science
 - in the law
 - in history
 - in everyda



- * ... is ubiquitous:
 - in science
 - in the law
 - in history
 - in everyday life
- Philosophers of causation are, however, divided on the issue: difference-making vs connectedness accounts

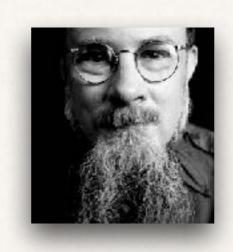
... is unsuccessful:

* ... is unsuccessful:

Difference-making

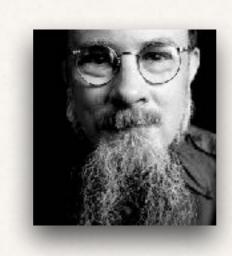
* ... is unsuccessful:

Difference-making



... is unsuccessful:

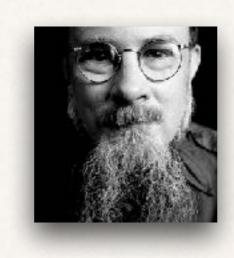
Difference-making





* ... is unsuccessful:

Difference-making

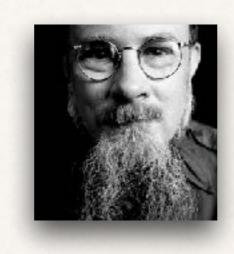






* ... is unsuccessful:

Difference-making



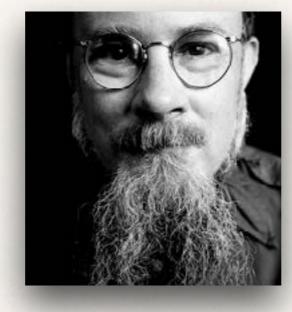






... is unsuccessful:

Difference-making







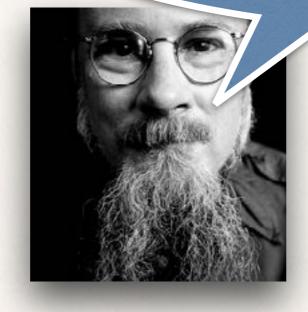


Existing word absences.

One reason for an aversion to causation by absences is that if there is any of it at all, there is a lot of it—far more of it than we would normally want to mention. At this very moment, we are being kept alive by an absence of nerve gas in the air we are breathing.

... is unsuccessful:

Difference-making



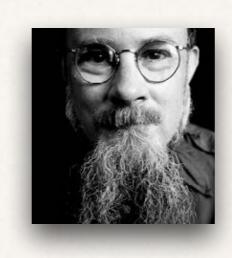






* ... is unsuccessful:

Difference-making



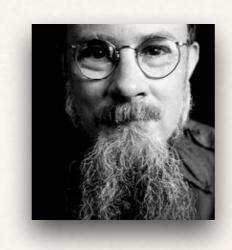






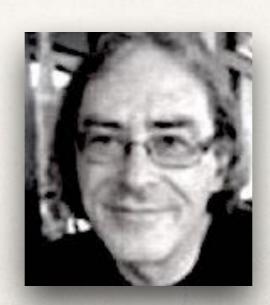
... is unsuccessful:

Difference-making





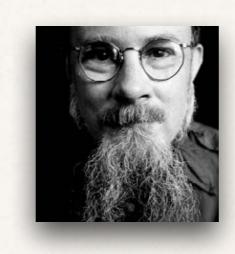






* ... is unsuccessful:

Difference-making



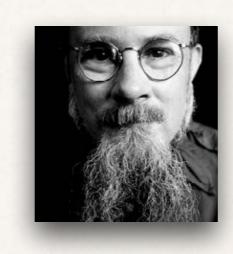






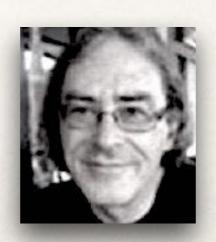
* ... is unsuccessful:

Difference-making











 Segregation of causal statements into first and second class not vindicated by linguistic practice

- Segregation of causal statements into first and second class not vindicated by linguistic practice
- * That's odd since there are thousands of concepts to describe acts of causing: smoking *kills*, increases in the money stock *inflate* the price level, Suzy *shoved* Billy, the storm *delayed* the plane, enzymes *phosphorylate* proteins

- Segregation of causal statements into first and second class not vindicated by linguistic practice
- * That's odd since there are thousands of concepts to describe acts of causing: smoking *kills*, increases in the money stock *inflate* the price level, Suzy *shoved* Billy, the storm *delayed* the plane, enzymes *phosphorylate* proteins
- * There are also multiple ways to describe the causing of one and the same effect: The father *burped* his child; he *caused* his child to burp; he *made* his child burp; he *got* his child to burp; *let* his child burp

- Segregation of causal statements into first and second class not vindicated by linguistic practice
- * That's odd since there are thousands of concepts to describe acts of causing: smoking *kills*, increases in the money stock *inflate* the price level, Suzy *shoved* Billy, the storm *delayed* the plane, enzymes *phosphorylate* proteins
- * There are also multiple ways to describe the causing of one and the same effect: The father *burped* his child; he *caused* his child to burp; he *made* his child burp; he *got* his child to burp; *let* his child burp
- * There is a difference between *kill* and *let die* but one that doesn't correspond to cause and quasi-cause

Causation and explanation

All the different causal claims have in common that they explain an outcome — they answer 'Why?' questions such as 'Why did the child burp?' or 'Why was the plane late?'

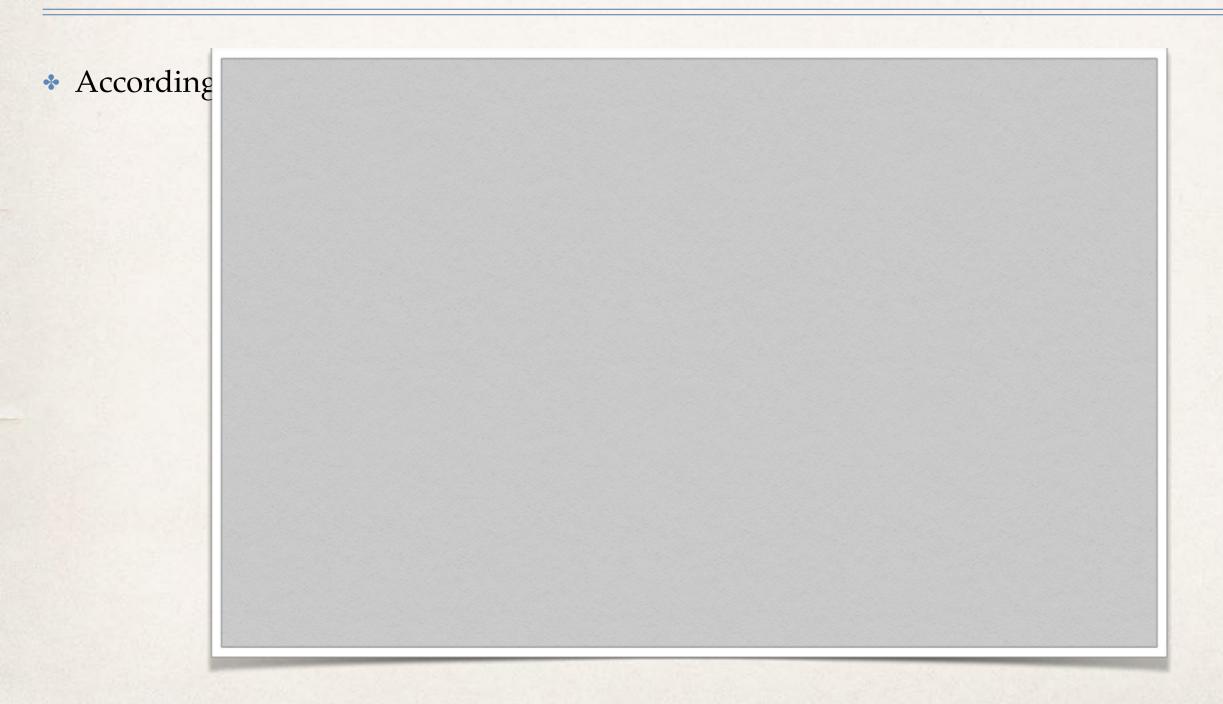
Causation and explanation

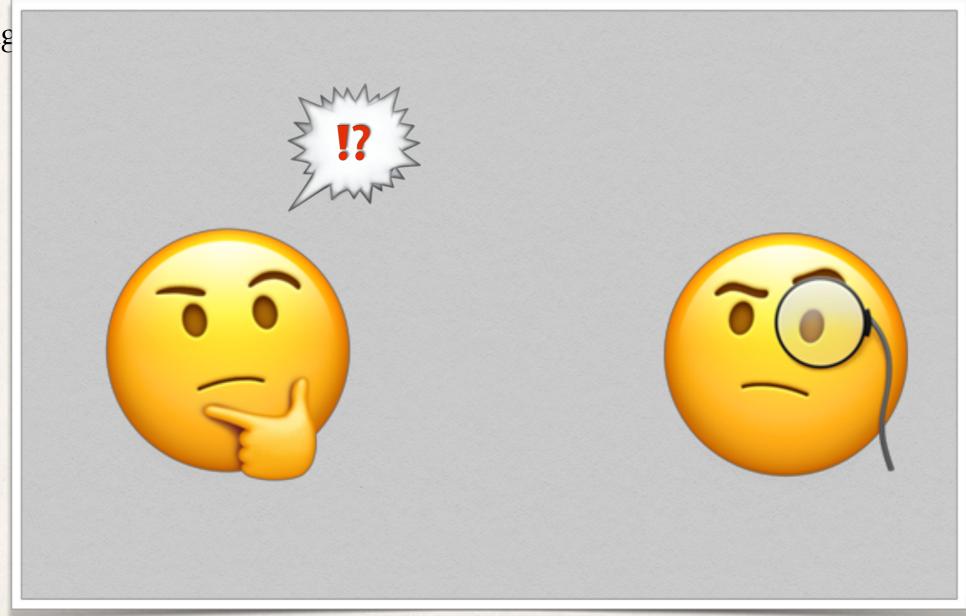
- All the different causal claims have in common that they explain an outcome — they answer 'Why?' questions such as 'Why did the child burp?' or 'Why was the plane late?'
- The account of causation proposed here maintains: that is all they have in common

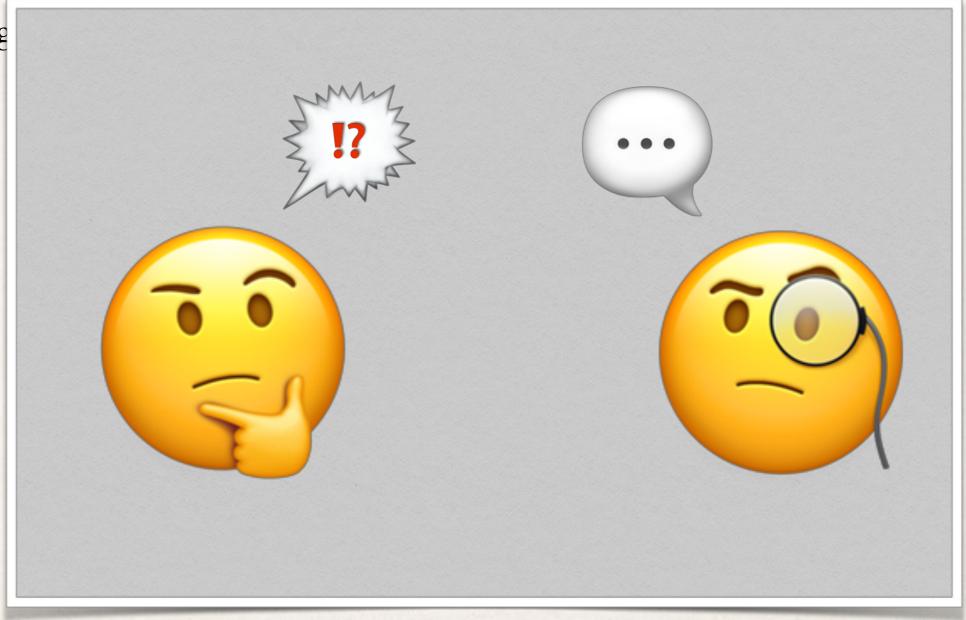
Causation and explanation

- All the different causal claims have in common that they explain an outcome — they answer 'Why?' questions such as 'Why did the child burp?' or 'Why was the plane late?'
- * The account of causation proposed here maintains: that is all they have in common
- So we need to address the question: 'What is an explanation?' and, in particular, 'What is a causal explanation?'

* According to Douglas Walton...







- * According to Douglas Walton...
 - Explanations are speech acts

- According to Douglas Walton...
 - Explanations are speech acts
 - They consists in the transfer of understanding from explainer to explainee, following a request to address a 'Why?'-question

- According to Douglas Walton...
 - Explanations are speech acts
 - They consists in the transfer of understanding from explainer to explainee, following a request to address a 'Why?'-question
 - * Explainer and explainee share a 'starting point', which may include: particular facts (my neighbour promised to feed my starter), suppositions (I take my neighbour to be a reliable person), generalisations (sourdough starters need feeding every three days), values (it's a good thing to keep one's promise), and norms (reliable people normally keep their promises)

- According to Douglas Walton...
 - Explanations are speech acts
 - They consists in the transfer of understanding from explainer to explainee, following a request — to address a 'Why?'-question
 - * Explainer and explainee share a 'starting point', which may include: particular facts (my neighbour promised to feed my starter), suppositions (I take my neighbour to be a reliable person), generalisations (sourdough starters need feeding every three days), values (it's a good thing to keep one's promise), and norms (reliable people normally keep their promises)
 - By asking a 'Why?'-question the explainee indicates a gap in his or her understanding, which is filled if the explanation is successful

- * According to Douglas Walton...
 - Explanations are speech acts
 - They consists in the transfer of understanding from explainer to explainee, following a request — to address a 'Why?'-question
 - * Explainer and explainee share a 'starting point', which may include: particular facts (my neighbour promised to feed my starter), suppositions (I take my neighbour to be a reliable person), generalisations (sourdough starters need feeding every three days), values (it's a good thing to keep one's promise), and norms (reliable people normally keep their promises)
 - By asking a 'Why?'-question the explainee indicates a gap in his or her understanding, which is filled if the explanation is successful
 - * Filling in gaps in understanding improves the explainee's inferential abilities

Understanding is simply the ability to make useful inferences

- Understanding is simply the ability to make useful inferences
- An explanation improves the explainee's ability:

- Understanding is simply the ability to make useful inferences
- An explanation improves the explainee's ability:
 - to predict a similar event in the future

- Understanding is simply the ability to make useful inferences
- An explanation improves the explainee's ability:
 - to predict a similar event in the future
 - to diagnose the reason for failure in order to fix a system

- Understanding is simply the ability to make useful inferences
- An explanation improves the explainee's ability:
 - to predict a similar event in the future
 - to diagnose the reason for failure in order to fix a system
 - to attribute praise or blame even when the outcome is singular

- Understanding is simply the ability to make useful inferences
- An explanation improves the explainee's ability:
 - to predict a similar event in the future
 - to diagnose the reason for failure in order to fix a system
 - to attribute praise or blame even when the outcome is singular
 - to justify or rationalise an action

- Understanding is simply the ability to make useful inferences
- An explanation improves the explainee's ability:
 - to predict a similar event in the future
 - to diagnose the reason for failure in order to fix a system
 - to attribute praise or blame even when the outcome is singular
 - to justify or rationalise an action
 - to serve aesthetic pleasure

- Understanding is simply the ability to make useful inferences
- An explanation improves the explainee's ability:
 - to predict a similar event in the future
 - to diagnose the reason for failure in order to fix a system
 - to attribute praise or blame even when the outcome is singular
 - to justify or rationalise an action
 - to serve aesthetic pleasure
- Inferences can be formal or material; in science and everyday life, usually the latter

 Causal explanations are transfers of understanding that follow specific norms of reasoning — the norms of causal reasoning

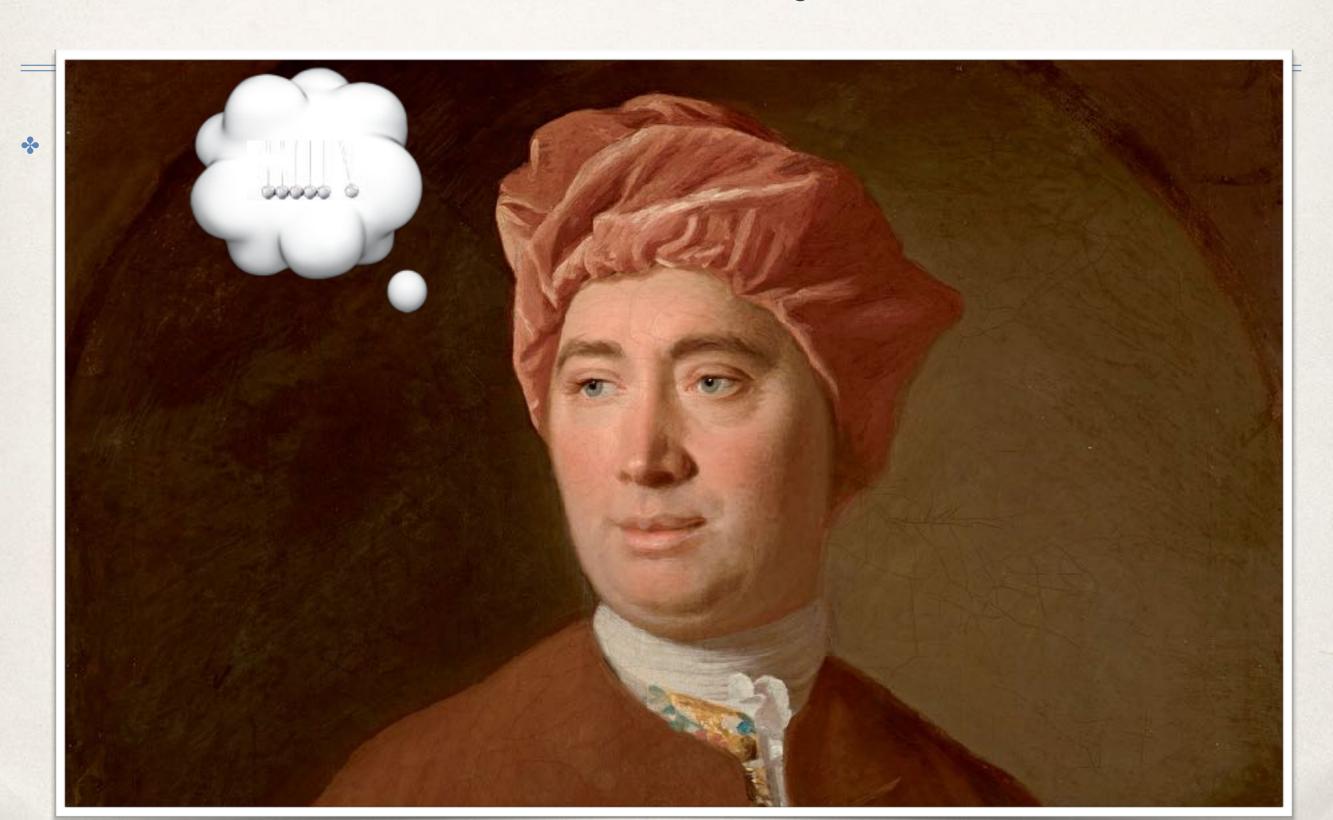
- Causal explanations are transfers of understanding that follow specific norms of reasoning — the norms of causal reasoning
- * For instance, in order for the neighbour's failure to feed the starter to be assertible as a cause, the explainer must be in the possession of evidence to rule out alternative possible explanations of the starter's death and of knowledge to the effect that not feeding may lead to death

- Causal explanations are transfers of understanding that follow specific norms of reasoning — the norms of causal reasoning
- * For instance, in order for the neighbour's failure to feed the starter to be assertible as a cause, the explainer must be in the possession of evidence to rule out alternative possible explanations of the starter's death and of knowledge to the effect that not feeding may lead to death
- The norms of causal reasoning include methodological, ethical and conceptual norms

- Causal explanations are transfers of understanding that follow specific norms of reasoning — the norms of causal reasoning
- * For instance, in order for the neighbour's failure to feed the starter to be assertible as a cause, the explainer must be in the possession of evidence to rule out alternative possible explanations of the starter's death and of knowledge to the effect that not feeding may lead to death
- The norms of causal reasoning include methodological, ethical and conceptual norms
- Other kinds of explanations mathematical, aesthetic follow different norms

Hume's two theories







- Hume's two theories
- My account is a development of Hume's 'other' account of causation according to which causation is a property of the mind, a type of reasoning

- Hume's two theories
- My account is a development of Hume's 'other' account of causation according to which causation is a property of the mind, a type of reasoning
- Causal claims are thus not objective but intersubjective: they are assertible in virtue of shared starting points

- Hume's two theories
- My account is a development of Hume's 'other' account of causation according to which causation is a property of the mind, a type of reasoning
- Causal claims are thus not objective but intersubjective: they are assertible in virtue of shared starting points
- Causal claims are thus relative to epistemic situations (Achinstein)

- Hume's two theories
- My account is a development of Hume's 'other' account of causation according to which causation is a property of the mind, a type of reasoning
- Causal claims are thus not objective but intersubjective: they are assertible in virtue of shared starting points
- * Causal claims are thus relative to *epistemic situations* (Achinstein)
- * Causation. For any two distinct agents in an epistemic situation *ES*, a causal claim that relates cause *C* and effect *E* is assertible if and only if one agent's citing *C* in *ES* successfully causally explains *E* to the other.

- Hume's two theories
- My account is a development of Hume's 'other' account of causation according to which causation is a property of the mind, a type of reasoning
- Causal claims are thus not objective but intersubjective: they are assertible in virtue of shared starting points
- Causal claims are thus relative to epistemic situations (Achinstein)
- * Causation. For any two distinct agents in an epistemic situation *ES*, a causal claim that relates cause *C* and effect *E* is assertible if and only if one agent's citing *C* in *ES* successfully causally explains *E* to the other.
- (Truth conditions may be formulated in terms of ideal epistemic situations.)

 To be sure: I do not share Hume's motivation for his account of causation — his associationism

- To be sure: I do not share Hume's motivation for his account of causation — his associationism
- I have argued in previous work that 'representationalist theories of causation' (theories that assume that 'cause' represents some feature of the real world) are unsuccessful; hence I wanted to try something new

A neo-Humean theory of causation

- To be sure: I do not share Hume's motivation for his account of causation — his associationism
- I have argued in previous work that 'representationalist theories of causation' (theories that assume that 'cause' represents some feature of the real world) are unsuccessful; hence I wanted to try something new
- Even though it is quite impossible for counterexamples to threaten the account, individual speakers may uses causal language wrongly (for instance, by misapplying the norms of causal reasoning)

A neo-Humean theory of causation

- To be sure: I do not share Hume's motivation for his account of causation — his associationism
- I have argued in previous work that 'representationalist theories of causation' (theories that assume that 'cause' represents some feature of the real world) are unsuccessful; hence I wanted to try something new
- Even though it is quite impossible for counterexamples to threaten the account, individual speakers may uses causal language wrongly (for instance, by misapplying the norms of causal reasoning)
- It is also possible that existing norms are jointly indeterminate (symmetric overdetermination)

On the shared starting point that...

- On the shared starting point that...
 - * the neighbour promised to feed the starter; I was going on work trip; the starter died;

- On the shared starting point that...
 - * the neighbour promised to feed the starter; I was going on work trip; the starter died;
 - the neighbour seems a reliable person;

- On the shared starting point that...
 - * the neighbour promised to feed the starter; I was going on work trip; the starter died;
 - the neighbour seems a reliable person;
 - sourdough starters need feeding every three days;

- On the shared starting point that...
 - * the neighbour promised to feed the starter; I was going on work trip; the starter died;
 - the neighbour seems a reliable person;
 - sourdough starters need feeding every three days;
 - * reliable people normally keep their promises; norms of causal reasoning x, y, z obtain

- On the shared starting point that...
 - * the neighbour promised to feed the starter; I was going on work trip; the starter died;
 - the neighbour seems a reliable person;
 - sourdough starters need feeding every three days;
 - * reliable people normally keep their promises; norms of causal reasoning x, y, z obtain
- * ... the explainee could expect the starter to thrive; but it died

- On the shared starting point that...
 - * the neighbour promised to feed the starter; I was going on work trip; the starter died;
 - the neighbour seems a reliable person;
 - sourdough starters need feeding every three days;
 - * reliable people normally keep their promises; norms of causal reasoning x, y, z obtain
- * ... the explainee could expect the starter to thrive; but it died
- * The explainer resolves the tension by stating that 'the neighbour failed to feed the starter'

- On the shared starting point that...
 - * the neighbour promised to feed the starter; I was going on work trip; the starter died;
 - the neighbour seems a reliable person;
 - sourdough starters need feeding every three days;
 - * reliable people normally keep their promises; norms of causal reasoning x, y, z obtain
- * ... the explainee could expect the starter to thrive; but it died
- * The explainer resolves the tension by stating that 'the neighbour failed to feed the starter'
- * This is a causal explanation as the explanation follows the norms of causal reasoning

- On the shared starting point that...
 - * the neighbour promised to feed the starter; I was going on work trip; the starter died;
 - the neighbour seems a reliable person;
 - sourdough starters need feeding every three days;
 - * reliable people normally keep their promises; norms of causal reasoning x, y, z obtain
- * ... the explainee could expect the starter to thrive; but it died
- * The explainer resolves the tension by stating that 'the neighbour failed to feed the starter'
- * This is a causal explanation as the explanation follows the norms of causal reasoning
- * Thus, the neighbour's failure causally explains and causes the demise of the dough

Jeff Bezos' failure to feed my starter, by contrast, doesn't come out as an explanation as the starting point doesn't include Jeff Bezos' promise

- Jeff Bezos' failure to feed my starter, by contrast, doesn't come out as an explanation as the starting point doesn't include Jeff Bezos' promise
- But without it, the explainee does not expect the starter to survive

- Jeff Bezos' failure to feed my starter, by contrast, doesn't come out as an explanation as the starting point doesn't include Jeff Bezos' promise
- But without it, the explainee does not expect the starter to survive
- * There is thus no tension or gap in the understanding to begin with

- Jeff Bezos' failure to feed my starter, by contrast, doesn't come out as an explanation as the starting point doesn't include Jeff Bezos' promise
- But without it, the explainee does not expect the starter to survive
- * There is thus no tension or gap in the understanding to begin with
- Moreover, even if there was a tension or gap, the claim that Jeff Bezos failed to feed my starter wouldn't improve anyone's inferential abilities

- Jeff Bezos' failure to feed my starter, by contrast, doesn't come out as an explanation as the starting point doesn't include Jeff Bezos' promise
- But without it, the explainee does not expect the starter to survive
- * There is thus no tension or gap in the understanding to begin with
- Moreover, even if there was a tension or gap, the claim that Jeff Bezos failed to feed my starter wouldn't improve anyone's inferential abilities
- Irrelevant absence causal claims are therefore not assertible in my account

* One objection to this kind of account goes: reasoning cannot play 'the role of a puller and shover and twister and bender' (Jonathan Bennett)

- * One objection to this kind of account goes: reasoning cannot play 'the role of a puller and shover and twister and bender' (Jonathan Bennett)
- But: when we ask for a 'puller and shover and twister and bender' we ask for an satisfactory explanation of some outcome of interest

- One objection to this kind of account goes: reasoning cannot play 'the role of a puller and shover and twister and bender' (Jonathan Bennett)
- But: when we ask for a 'puller and shover and twister and bender' we ask for an satisfactory explanation of some outcome of interest
- To ask 'why is it that the causal relation obtains' often means to provide a more detailed (often, mechanistic) explanation

- One objection to this kind of account goes: reasoning cannot play 'the role of a puller and shover and twister and bender' (Jonathan Bennett)
- But: when we ask for a 'puller and shover and twister and bender' we ask for an satisfactory explanation of some outcome of interest
- To ask 'why is it that the causal relation obtains' often means to provide a more detailed (often, mechanistic) explanation
- These explanations will be satisfactory if they improve an individual's reasoning capacity; and information about the mechanism will certainly do that for instance by improving the reasoner's ability to intervene

- One objection to this kind of account goes: reasoning cannot play 'the role of a puller and shover and twister and bender' (Jonathan Bennett)
- But: when we ask for a 'puller and shover and twister and bender' we ask for an satisfactory explanation of some outcome of interest
- To ask 'why is it that the causal relation obtains' often means to provide a more detailed (often, mechanistic) explanation
- * These explanations will be satisfactory if they improve an individual's reasoning capacity; and information about the mechanism will certainly do that for instance by improving the reasoner's ability to intervene
- Once an explanation fills a gap in an explainee's understanding and improves his inferential abilities, there is nothing left for an account of causation to do

The explanationist account of causation is the only account currently on offer that adequately deals with causation by absences

- The explanationist account of causation is the only account currently on offer that adequately deals with causation by absences
- Because claims of causation by absences are ubiquitous in science, legal practice, history and everyday life, it would be a good idea for an account of causation to provide an adequate treatment...

- The explanationist account of causation is the only account currently on offer that adequately deals with causation by absences
- Because claims of causation by absences are ubiquitous in science, legal practice, history and everyday life, it would be a good idea for an account of causation to provide an adequate treatment...
- The cost the explanationist has to pay is that his account makes causation relative to epistemic situations, and epistemic situations can involve false beliefs about particular facts, generalisations, norms etc.

- The explanationist account of causation is the only account currently on offer that adequately deals with causation by absences
- Because claims of causation by absences are ubiquitous in science, legal practice, history and everyday life, it would be a good idea for an account of causation to provide an adequate treatment...
- The cost the explanationist has to pay is that his account makes causation relative to epistemic situations, and epistemic situations can involve false beliefs about particular facts, generalisations, norms etc.
- * But I would argue that this is a small price to pay; what matters is inferential success; and as long as the inferential practices are successful, who cares whether they issue in beliefs that are literally true?

The explathat adeq

Because of practice, local causation

The cost to relative to beliefs ab

But I wou success; a whether t



the only account currently on offer osences

re ubiquitous in science, legal ld be a good idea for an account of nt...

nat his account makes causation mic situations can involve false ons, norms etc.

e to pay; what matters is inferential ctices are successful, who cares ally true?

The explathat that adeq

Because of practice, local causation

The cost to relative to beliefs ab

But I wou success; a whether t The great end of life is not knowledge but action.

n offer

re ubiquitous in science, legal ld be a good idea for an account of nt...

nat his account makes causation mic situations can involve false ons, norms etc.

to pay; what matters is inferential tices are successful, who cares ally true?